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OSCAR F. POTTER, M. D.,

Professor of Materia Medica and Medical Botany in the St. Louis College of Pharmacy,

EDITOR.

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No. 1.

DEFECTIVE ALIMENTATION A PRIMARY CAUSE OF DISEASE.

Vegetable Dyspepsia, and Chronic Diarrhea, and their Complications; or the Diseases arising in Army and Private Life from a too exclusive Use of Vegetable, and especially Amylaceous Food; with interesting Matter relating to the Diet and Treatment of these Pathological Conditions, and a new Ration proposed with which this large Class of Diseases may be avoided by Armies.

By J. H. SALISBURY, M. D., Cleveland, Ohio.

[Communicated for the St. Louis Medical Reporter.]

Some of the diseases arising from defective alimentation are the various forms of vegetable dyspepsia, chronic diarrhea, the so-called "summer complaint" in children, purpura hemorrhagica, rheumatism, tuberculosis, diabetes, the various forms of colloid disease and many affections of the blood apparatus and nervous system, which result in lung and heart disease, and in affections of the mind, eye, ear and organs of speech.

This paper is an abstract of experiments and observations in army diseases and in private practice, and is the result of extended and patient labor.

Much of this matter appeared in the report of the Surgeon-General of Ohio for 1865. Since that publication I have considerably extended my observations and experiments.

By defective alimentation is meant the too exclusive and too long continued feeding upon any one kind of food. This kind of feeding overtaxes those portions of the alimentary canal

2 *Defective Alimentation a Primary Cause of Disease.*

designed for digesting this particular character of aliment, so much so, that the digestive process soon becomes imperfect and fermentation gradually supervenes. The blood before long begins to show signs of deterioration, and the various tissues depending upon good blood for their healthy support have their physiological processes little by little disturbed, and gradually pathological states of the histological elements arise. The healthy processes of cell feeding, cell digestion, cell assimilation, cell organization and cell elimination, become more or less deranged, and the various organs and tissues being supplied with imperfect and abnormal material for carrying on in a physiological manner their normal functions, step by step yield to pathological invasion, and soon palpable disease is the result.

The diseases arising from too exclusively feeding upon any one kind of food are far more numerous than has been supposed. It has long been known that the too exclusive use of salt meats tends to produce scorbutic states. More recently it has been determined that fresh meats also, under similar circumstances, produce like conditions. These conditions are best counteracted by the free use of vegetable food, and the vegetable acid salts of potassa and iron.

To this list of scorbutic excitants we may add vegetable food, and especially that of an amylaceous, saccharine and leguminous character.* These are eminently *scorbutic excitants*. The diseased conditions produced, however, by them are of a peculiar type, differing in many particulars from those produced by animal food.

When the scorbutic taint is created by the too exclusive use of amylaceous and leguminous products, these conditions, instead of being best treated by the free use of *vegetables* and the *vegetable acid salts of potassa and iron*, require with the latter albu-

* The reason that beans are so indigestible is, that the starch grains are held in large, strong, leguminous sacs, that are almost entirely insoluble in the secretions of the digestive apparatus. The result is, that the starch inside the sacs can not be reached by the alimentary secretions, and hence they remain undissolved in their leguminous cases, and gradually ferment in their passage, developing large quantities of carbonic acid.

minous animal food, as these conditions have been excited by the absence of this kind of aliment.

The abnormal states produced by a too exclusive amylaceous diet differ from those produced by one that is too exclusively animal. They present themselves, first, in a deranged condition of the alimentary canal and nervous system, with a remarkable tendency to fibrinous depositions in the heart and large vessels leading to it, with the lodgment of emboli in the pulmonary capillaries producing thrombosis and embolism; while the scorbutic taint from meat shows itself usually first in the skin and mouth, the blood being thin and there being little or no tendency to fibrinous depositions. Both often result in pains and aches in the extremities and back, simulating those of chronic muscular rheumatism.

The derangement of the system arising from the too exclusive use of vegetable food, and especially that of an amylaceous and saccharine character, are various and peculiar, and throw interesting and valuable light upon many diseased conditions. They open up a wide field for careful research and point us to simple preventable excitants as the true causes of some of the gravest abnormal conditions. That amylaceous aliments, when too exclusively used, should excite paralytic states and tendencies, is most highly interesting. That this same kind of food should have a tendency to develop in the system a saccharine and fermentative state, accompanied by *vegetable dyspepsia*, and this sooner or later followed by the so-called *chronic diarrhea*, and that by and by conditions arise which may result in a disposition to fibrinous depositions in and near the heart, and in the pulmonary capillaries (thrombosis and embolism), and a susceptibility to diseases of the eye, ear and vocal organs, is also most highly important and suggestive. That colloid and tubercular diseases, and the principal form of diabetes and the "summer complaint" of children, should arise from the same or similar causes, adds still more to the interest in studies in this direction. It reminds us that, perhaps, to the food we eat we may look for a great share of the "ills that flesh is heir to." These abnormal con-

4 *Defective Alimentation a Primary Cause of Disease.*

ditions become simple systematic expressions that warn us of transgressions in dietetic laws.

Scarcely anything has been done, except by way of accident, in tracing nicely the peculiar effects and influences upon the system of living exclusively for any length of time upon individual kinds of food. Here is a field, at the very threshold of our existence, so simple in itself that it has been entirely passed over by the investigator who is busying himself exploring, in the obscure mazes beyond, for those very causes of disease which he is daily taking into his system in the food he eats for nourishing and invigorating his body.

The following are some of the diseases excited by defective feeding :

VEGETABLE DYSPEPSIA.

This arises from the too exclusive and too long continued use of vegetable, and especially amylaceous and saccharine food. The stomach is the first organ to suffer. This organ is designed in man for digesting mainly animal food. It requires animal aliment to excite in its glands healthy secretion in the normal quantity, and to stimulate its muscular fibres to keep up those movements which are necessary for physiological digestion and transmission.

The too exclusive and long continued use of vegetable, and especially amylaceous and saccharine, food, fills the stomach with materials which it imperfectly digests and which fail to stimulate the organ in a healthy manner. The result is that gastric secretion becomes abnormal and the food lies in the stomach so long that the fermentative processes, little by little, supervene, and at first carbonic acid, sugar and alcohol result. This marks the cell stage of development of the yeast vegetation in the stomach, and is accompanied by distentions of the gastric walls after feeding and with eructations of carbonic acid.

Sooner or later the filamentous stage of yeast vegetation begins, ushering in the acetous fermentation, producing acid stomach and sour eructations. We now have *vegetable gastric dyspepsia* fully inaugurated.

Yeast plants are rapidly developed in the organ, and every particle of vegetable food that is taken in immediately begins to ferment, the stomach being converted into an apparatus for manufacturing beer, alcohol, vinegar and carbonic acid. The carbonic acid partially paralyzes the gastric nerves, so that the irritation, inflammation, and thickening produce but little pain when compared with the gravity of the pathological changes going on. If the causes are not removed the lesions increase and the disease extends. The fermentative processes are gradually transmitted to the small and large intestines, distending them with carbonic acid and other products of fermentation, producing *vegetable dyspepsia of the bowels*.

If this continues for any length of time irritation, inflammation and thickening of the large intestines is the result. This is sooner or later accompanied by *chronic diarrhea*, severe in proportion to the gravity of the lesions.

In treating this disease the great remedy is to *remove the cause*. Besides this little is necessary. It may be well, however, to clean the yeast and slimy matters from the mucous membrane of the alimentary canal with Rochelle salts and to administer a few anti-fermentatives and tonics.

This dyspeptic condition in private life may continue for months or even years before it results in sufficient irritation and thickening of the large intestines to produce chronic diarrhea. This is, however, sure to follow sooner or later. At first the bowels are bloated and constipated. This state is followed ere long by alternate periods of diarrhea and constipation, and this by almost constant diarrhea.

In this type of disease the passages occur mostly during the night and morning. In army practice the dyspeptic stage is usually either brief or wanting.

The following is a description of chronic diarrhea as it occurs in armies. The same disease is, however, constantly met with in private practice, but in a mitigated form.

CHRONIC DIARRHEA.—This disease, with the other intercurrent abnormal states that arise from the too exclusive use of a dry

amy^laceous diet, may be conveniently divided into three stages—the incubative, the acute and the chronic.

Incubative Stage.—The diarrhea is preceded in all cases that are uncomplicated * by a constipated condition of the bowels. This is, however, generally overlooked by the patient, from the fact that frequently the diarrhea comes on gradually, first, having only one profuse passage in the twenty-four hours, and this taking place in the latter part of the night. The appetite being good and there being no pain, save immediately preceding the passage, this condition is allowed to run on uncared for—frequently for some time—till the passages have increased from four to ten, or more, per day, mostly during the night. The patient now applies for treatment and almost invariably reports to the surgeon that his diarrhea had been preceded by looseness. The incubative stage of the disease has made no impression upon him and he only remembers that his bowels have been loose for some time. If, however, his case be carefully traced back, a preliminary constipated period, often of several weeks standing, will be found to have existed. During this period of constipation the patient has had from one to four scant, difficult, and either hard or plastic passages per week. During the evening and night he has been troubled with the development of gases in his stomach and bowels, often distending them so as to excite pain through from one side to the other, accompanied by eructations and passages of wind.† This development of gases in the alimentary canal goes on increasing during the incubative stage till the diarrhea sets in. During this constipated period there is also a paralytic tendency. This shows itself first in the large intestines, in a want of normal sensibility and peristaltic action, and then in the lower extremities, which exhibit prickling sensations and are liable to “get asleep,” as the patients describe it. There is a mixed up numb feeling in

* The complicated varieties are such as are directly excited into activity by the enervating effects of other diseases, as dysentery, intermittent and remittent fevers, &c.

† Often the bowels have become so paralyzed that the patient is unable to pass the generating flatus, and hence he frequently becomes enormously distended.

the head, with frequently a confused condition, ringing in the ears at night and *muscæ volitantes*, with sometimes a "blur before the eyes." The bronchial and pulmonary membranes become more or less irritated, frequently attended with a feeling of constriction about the chest, with a cough during the night and towards morning, and after getting up, with the expectoration often of thick, cream-colored, sweetish mucus. The tongue is generally unusually clean and watery, with a red border and a red streak down the centre, which central streak sometimes feels sore. There is often slight palpitation of the heart, with a tendency to fibrinous depositions in its cavities and in the pulmonary vessels. The voice becomes often hoarse, with a peculiar stiff, constricted feeling in the pharyngeal and laryngeal region. There is a lassitude about the muscles which is rather dispelled than otherwise by exercise. Appetite good.

With many the symptoms of the incubative stage are not very strongly marked, especially when the patients are actively engaged. After a short time, in such cases, it frequently passes away, the alimentary canal adapting itself to the dry amylaceous food, so that digestion goes on normally and the passages become quite natural in consistence, color and frequency. When this period is once passed the tendency to have diarrhea from living upon starchy food is much lessened, and the patients are now disposed to become more plethoric than usual. They feel, however, less tonicity of the system and readily tire, and frequently are troubled with palpitations, and short and hurried breathing after any severe fatigue. If, however, the system becomes debilitated through any cause, such as from typhoid, intermittent, or bilious remittent fever, &c., there is a marked tendency to diarrhetic conditions, which, if not early subdued, become chronic and more difficult to control.

Quite frequently cases are met with of remarkably strong and healthy digestive organs, where the paralytic tendencies of the incubative stage continue without exciting diarrhea. In such cases there is a strong disposition to fibrinous depositions in the heart (thrombosis), and to the lodgment of fibrinous clots

(emboli) in the pulmonary vessels, producing congestions and smothering sensations. There is also a tendency to tuberculosis and disease of the eye and ear, with partial paralysis of the larynx, with pains and aches in the extremities and back, simulating muscular rheumatism. Such patients are soon disabled and become permanent invalids, and not many months elapse before the abnormal states advance so far that the diseased conditions become obstinate and often incurable. Frequently this class of patients become so paralyzed that they are unable to help themselves. In others, symptoms present themselves resembling somewhat those of muscular rheumatism, without the swelling and redness, but which are really scorbutic in character and like those previously mentioned, originate from the want of a proper admixture of the necessary ingredients for healthy alimentation and nutrition.

Acute Stage.—The incubative stage is followed by a looseness of the bowels, or diarrhea more or less marked, with the development largely of gaseous products in the stomach and intestines, particularly during the evening and night. The first diarrhea stools generally come on towards morning. There is usually, at first, but a single passage daily and this occurs in the latter part of the night or early in the morning. With it is passed much wind. Before the passage, and immediately after, there is a heat and throbbing in the lower portion of the large intestines. The evacuation is followed by a general feeling of relief, and usually there is no uneasiness about the bowels during the subsequent day. Nothing abnormal is felt till the following evening, when the stomach and intestines become again distended with flatus, which appears in active motion. This continues through the night or until the profuse evacuation, which is generally more watery than that of the first night, and is accompanied and followed by the same train of symptoms. This state of things may continue, slightly increasing, for from two to ten days, according to the food, exercise and condition of the system. Finally, the bloating during the night, and the passages following and accompanying the same, become so frequent and disturb

the rest of the patient so much, that he applies for medical treatment.

During the acute stage there is a highly fermentative tendency in the alimentary canal during the evening and night, accompanied by more or less pain. The passages during this stage frequently suddenly increase from one or two daily to twenty and more, the patient in a few hours becoming reduced so low that he is unable to get up alone; and the large intestines and sphincter become so paralyzed that the feces are passed involuntarily in bed.* The paralytic tendency, and the ringing in the ears, and the pulmonary and bronchial symptoms are more marked than in the incubative stage. The heart becomes irritable and is thrown into violent palpitation, often by excitement. The tongue becomes red, swollen, smooth, or loose and watery; the voice is often husky and sometimes reduced to a whisper; and rheumatic pains—or what simulates them—occur in the extremities and back, and the urine becomes scanty and often loaded with oxalate of lime. During this stage, which lasts for several days, the time varying according to the diet, exercise and condition of the patient, the disease readily yields, usually, to a simple cathartic dose of Rochelle salts, followed by the vegetable acid salts of potassa, soda and iron in dilute solutions, and an albuminous animal diet. If, however, neglected or attempts are made to suppress it with opium and astringents, and light farinaceous diet, the abnormal alimentary conditions invariably become worse, and the diarrhea reappears with aggravated symptoms and soon becomes chronic. There is more or less congestion of the whole alimentary canal, and especially of the stomach and large intestines, which are frequently more or less inflamed. This condition yields more readily to the remedial and dietetic means above referred to, than to the ordinary remedial measures resorted to for subduing the usual inflammatory conditions. The discharges are thin and foamy—like yeast—a single passage frequently nearly filling

* This is particularly the case in armies. All of these conditions are, however, met with almost daily in private practice. This is especially the case in symotic regions or localities where cryptogamic vegetation and fermentations readily occur, and progress rapidly.

a large chamber, very much to the surprise of both patient and attendants. In color they are either clayey, brownish, pinkish, or normal, and contain more or less mucus and gelatinous (colloid) matter; the latter being in little jelly-like lumps disseminated through the fecal matters. In later stages blood is frequently present. Fragments of undigested food, and crystals of the triple phosphates, and of oxalate of lime, are scattered abundantly through the stools. Fragments of intestinal epithelium, and casts of the glandules of Lieberkuhn, and often the follicles of Peyer, are found in the discharge.

Chronic Stage.—During the chronic stage the stools range from three to twenty and sometimes more per day. They occur more frequently during the night and morning than during the balance of the day, and are preceded and accompanied by the development, and eructation, and passage of much flatus.* The intestinal gases appear to be constantly in motion, indicating fermentation. During the day the passages are less frequent, and there is less flatus and intestinal uneasiness. The appetite is generally good and sometimes unusually so, there being no difficulty in retaining food on the stomach. The passages are mostly of a pale ash color, thin and watery or gelatinous and slimy, in which are disseminated in greater or less abundance, according to the severity of the case, lumps of jelly-like gelatinous (colloid) matter, frequently streaked with blood and sometimes masses of cream-colored pus.

In other cases they are—especially in the advanced stages—various shades of green and brown from gelatinous colloid matter and altered blood. The pus in the feces is distinguished from the colloid matter and mucus by its cream color and its readily mixing with water. The mucus and colloid matter are more glazy and ropy, like the white of an egg, and do not mix with water. The colloid matter has a yellowish and sometimes greenish tinge, and occurs in lumps and ropes disseminated through the fecal matter by which it is readily distinguished

* Frequently the intestines are so thoroughly paralyzed that the patients are unable to pass the flatus, it remaining, distending the abdomen to a most uncomfortable extent.

from the mucus, which covers the outside of the feces with a slimy layer when they have sufficient consistence, and when not, it is so mixed with the fecal matter as scarcely to be distinguished save by the ropiness or slimy character of the passages. During this stage there is more or less uneasiness, pain and swelling in the epigastrium, and a constant tenderness, especially during nights, along the colon and rectum. In severe cases there is often complete paralysis of the large intestines and sphincter, so that the feces are passed involuntarily in bed. Frequently in such cases the passages are composed almost entirely of gelatinous matter, which is sometimes of a dark, dirty green color by reflected light, and greenish-yellow by transmitted light. This matter is frequently taken for bilious secretions. The appetite is variable though generally remarkably good, considering the gravity of the lesions. During this stage there is a paralytic tendency showing itself more or less in the lower bowels and inferior extremities. The legs are very apt to prickle and "get asleep," as the patients describe it. There is also more or less bronchial and pulmonary irritation, with night and morning cough, expectoration of a sweetish cream-colored mucus, and often a constricted feeling in one or both lungs, with a marked tendency to the clogging up of the pulmonary vessels with emboli and to tubercular depositions. The disposition to functional and organic disease of the heart is increased in this stage, the symptoms of which are frequently strongly marked. Ringing in the ears is frequent at night and there is also an amaurotic tendency with ulcerations of the cornea, especially in advanced stages of the disease. There is considerable thirst, a watery state of the mouth and fauces, tongue generally unusually clean, and often red and watery, and sometimes bloody; urine small and sometimes loaded with lithates: a dry, harsh, bran-like scaly skin; a sense of uneasiness; dull pain and heat about the lower bowels; pains and tenderness in the epigastrium, and more or less pain and weakness in the lower extremities and back; frequent chilliness, intermitted occasionally by flashes of heat; a general sense of weariness and indisposition to either bodily or mental exertion, and if the

disease is not checked a daily increasing emaciation ; dyspeptic symptoms show themselves, especially during the evening and night, such as acidity of stomach, sour eructations, distension of stomach and intestines with flatus, which is in constant motion, oppression or weight in the epigastrium, burning sensations about the precordia, &c., with palpitation of the heart. The appetite, however, is seldom impaired to the extent that the lesions would seem to indicate, but, on the contrary, is often increased as the disease progresses and the passages increase in frequency ; there is often an increased craving for food and drinks, with greater dryness of skin, mouth and fauces, and a sensation of sinking, and tenderness, and weakness about the stomach. The food, notwithstanding the amount consumed, produces no increase of flesh, on the contrary, a steadily increasing emaciation is almost always noticed, with increasing enervation of body and mind. The general temperature of the body is somewhat lowered, either phosphoric or oxaluric symptoms set in and the patient becomes peevish, fretful, complaining and hypochondriacal, magnifying his pains and sensations. The memory becomes impaired and the sick man more or less childish. There is a disagreeable exhalation from the surface of the body and from the pulmonary membranes.

The feces have an offensive fermentative odor, and the urine is small and is generally loaded with lithates and oxalates. The tongue is usually clean and watery, with red edges and centre, and is sometimes bloody, and there is a peculiar disposition to irritable condition of the pulmonary membranes with tickling sensations, and night and morning cough and expectoration of thick, sweetish yellow mucus ; some oppression at times in breathing, and frequently a peculiar constricting sensation in the pharynx in going through with the act of swallowing. Where there is a predisposition to phthisis the disease is very apt to be rapidly developed. The gums sometimes assume a reddish, spongy appearance, and readily bleed, and the breath is very offensive. Palpitation of the heart becomes a frequent and troublesome symptom. There is often irritation, to a greater or less extent, in the bladder and urethra, with icteroid

tendencies. In this stage of the complaint there is a remarkable tendency to tubercular development in the lungs, with the usual attendant symptoms. The patient sinks rapidly, the emaciation and debility become extreme, and sometimes what appears to be a peculiar diphtheretic exudation, but which is really yeast plants (*Cryptococcus cerevisiæ* *) developing in the glycogenic mucus secretions, shows itself creeping up in the pharynx and fauces, and finally dips down into the larynx and the patient soon expires, exhausted apparently from the want of nourishment, which, although taken freely, is not appropriated, it passing in the feces mostly undigested.

In the alimentary canal of soldiers in active service there seems to be excited a peculiar fermentative tendency and scorbutic condition. This condition renders them very susceptible to attacks of chronic diarrhea whenever their systems are enervated by other diseases, such as dysentery, intermittent, bilious remittent or typhoid fever, over fatigue, or other causes that enfeeble the system and impair digestion. This is the reason why chronic diarrhea so often follows and accompanies these diseases. In such cases it appears merely as a complication of other pathological conditions, which modify its incubative and acute stages, so that the preceding remarks relating to the history and progress of the several stages of uncomplicated diarrhea, are not strictly applicable to this class of cases. The conditions, however, in the chronic stage of both are alike and require the same management, diet and treatment.

There appears to be in armies a peculiar condition of the alimentary canal, even in *well soldiers*, as evidenced by post-mortem examinations of those that are shot dead in battle,† predisposing them to attacks of chronic diarrhea upon exposure to any cause that enervates the system and impairs digestion.

This condition is a chronic one that gives no particular pain

* There appears to be excited in the system a highly saccharine condition, the secretions all passing readily into fermentative states developing yeast plants.

† See medical and surgical reports of the Crimean war, where post mortems of well soldiers shot dead in battle are described.

14 *Defective Alimentation a Primary Cause of Disease.*

or inconvenience * to the soldier, unless excited into activity by enfeebling causes, such as attacks of fever, dysentery, over-fatigue, insufficient and improper food, or other debilitating causes. The chronic condition is the same in nature as that of chronic diarrhea, it only being less in degree and arises from the same cause.

There is in this disease a remarkable tendency to the formation of fibrinous deposits in the heart and pulmonary vessels, and to tubercular depositions in the lungs. Usually the system has not long been under the influence of the disease before there are indications that these abnormal formations have already begun. In later stages night sweats set in, and frequently become very enervating and unpleasant symptoms. The skin becomes dry and scaly, the urine scanty, the abdomen sunken, pulse from 90 to 140 per minute, voice husky and hollow, and sometimes reduced to a whisper; the cornea occasionally ulcerated, and not unfrequently—in severe cases—congestion of the lungs or brain sets in and proves fatal in a few hours. Sometimes obstinate renal congestions occur, accompanied by suppression of urine and consequently uremic poisoning, which proves fatal.

Microscopic Examination of the Feces.—The microscopic and chemical examinations, connected with the feces, developed the following interesting facts:

1. That as soon (after beginning to subsist on amylaceous diet) as gases begin to develop in the intestinal canal, yeast plants begin to develop in the alimentary matters to an abnormal extent.

2. That this development of yeast plants is evidence of the inauguration of fermentative changes in the amylaceous food.

3. That fermentation and the development of yeast plants continue to increase till diarrhetic conditions are produced.

4. That a peculiar gelatinous colloid matter, usually in little masses scattered through the feces, shows itself to a greater or less extent as soon as the diarrhea commences. That gener-

* One reason why intestinal lesions pass unnoticed by the apparently well soldier, is owing to the paralytic condition of the intestinal walls, caused by a too exclusive use of amylaceous food, which fills the bowels with carbonic acid.

ally this matter is present in direct proportion to the severity of the case.

5. That this colloid matter is not the cause of the diarrhea but merely the consequence of certain saccharine and fermentative conditions of the system, in which state the connective tissue of the alimentary walls becomes a proper nidus for its development. As soon as these systemic conditions are overcome, this colloid matter ceases to develop and disappears entirely from the feces. It hence may be regarded as the consequence and not the cause of certain systemic conditions. Its development, however, seems to act as an irritant and increase the intestinal lesions.

6. That the system on this amylaceous food becomes highly glycogenic and fermentative, so that even the mucous secretions often contain sugar and rapidly pass into fermentative states developing yeast plants.

7. That this saccharine condition is abnormal and appears to be a peculiar type of the so-called *scorbutus*, and yields more readily to an albuminous animal diet, with anti-fermentatives, and the vegetable acid salts of potassa and iron, than to any other dietetic and remedial means.

Microscopic Examination of Urine.—In chronic diarrhea the urine is usually small in quantity, rather high-colored, and deposits, on standing, a tolerably large sediment of pinkish or brick-colored lithates. The disease is not unfrequently accompanied and followed also by obstinate oxaluria and phosphuria. The presence of biliary products is also strongly marked.

Sugar in Fecal Matters and in Mucous Secretions.—In all three stages of the disease sugar is largely present in the fecal matters and in the mucous secretions of the alimentary canal.* *Torrula* cells are abundant, and frequently the developing spores of a species of *pennicillium*, and sometimes the cells of the *sarcina ventriculi* are met with. All these are indicative of active fermentative changes in the amylaceous and saccharine matters present. The development so largely of gaseous products during

* Fatty products and crystals of the triple phosphates and oxalate of lime are also frequently largely present in the stools.

the evening and night is indicative of active fermentation of the amylaceous food eaten during the day. There is evidence that the secretions of the mucous membrane of the alimentary canal, fauces, mouth, and pulmonary surfaces, eventually become saccharine. This is evidenced in the development of torrula cells and filaments of penicillium in the viscid layer of mucus lining the whole alimentary canal, and in the mucous secretions of the œsophagus, pharynx, larynx, trachea, and mouth, in the later stages of the disease. This development on the surface of fauces, pharynx and mouth, resembles the exudation in diphtheria, for which it is frequently taken. Beautiful hexagonal prisms of crystalline sugar are frequently met with in the fecal matters.

Cholesterine and Seroline in Feces.—Cholesterine and seroline occur quite largely in the feces of chronic diarrhea, the latter more largely than the former. The longer the feces stand and ferment, in or out of the bowels, the less cholesterine there is and the more seroline.

Cryptogamic Vegetation in Feces.—The cells of the yeast plant (*Cryptococcus cerevisiæ*) occur largely in the fecal matters of every well-marked case of chronic diarrhea. There is also the cells of what appears to be a larger species of *cryptococcus*. These are not uniformly met with. The *sarcina ventriculi*, or "wool-sack" plant, is often present in large quantities. Such cases are more obstinate, there being greater difficulty in checking the abnormal development of intestinal gases. There is also another species of *sarcina* which I have met with occasionally. The cells are smaller and more pearly than that of the *ventriculi*, and occur usually singly or in twos, and sometimes in fours. Two or three species of minute *algæ* occur abundantly in all well marked cases. Occasionally the vegetating spores and mycelium of a species of *penicillium* are met with in the colloid matter, especially in cases where the stools are mainly made up of this gelatinous substance and are of a greenish color.

This colloid or gelatinous matter is uniformly present in all true cases of chronic diarrhea. It occurs, however, much larger in the stools in malarial localities than in non-malarial.

(To BE CONTINUED.)

A SPRING AND SELF-RETAINING SPECULUM.

By NATHAN BOZEMAN, M. D., New York.

The vagina, as a membranous canal, may properly be said to represent a truncated cone with the base turned upward and the apex downward, corresponding with its mouth.

The general outline of the organ, as viewed in its natural condition, is such as would result from bringing the two opposing walls of the cone together, the cervix uteri being encircled by it at the centre of its base, and its mouth closed by the falling together of the labia majora.

The line, therefore, formed by the anterior and posterior walls of the organ coming together is transverse, while that formed by the opposing surfaces of the labia is antero-posterior, being at right angles.

Now the most natural indications for the dilatation of this canal with the peculiarities named would appear to be, first, separation of the labia, and, second, the two opposing walls of the collapsed cone, so to speak. This, scarcely need I say, is the view generally taken of the relationship of these parts, and the usual practice is based upon it of bringing within the field of observation the cervix uteri and the two vaginal walls.

This plan of antero-posterior dilatation of the vagina, it matters not what form of speculum is used, I conceive to be a popular error, and it is wholly at variance with the true anatomical relationship of the parts. I shall presently attempt to explain more fully my meaning in our description of a *new form of speculum*, which I have the pleasure of presenting now to the notice of the profession. The principle of construction, as well as principle of action of this new instrument, will be found to differ from all others heretofore in use in several respects, which I shall explain farther on. Suffice it to say, one of the very essential differences is in what might be termed the working point of the instrument, that portion which is applied to the resistance. The blades of our instrument are introduced between the opposing walls of the vagina edgewise, instead of flatwise as formerly; and the dilatation is effected transversely or horizont-

ally, as will be better understood when we come to explain the principle of action. The same instrument applies to the dilatation of the vulva as well as the vaginal canal; thus giving us at one glance a view of the parts from the mons veneris to the cervix uteri in front, and behind, nearly the whole of the posterior wall of the vagina—any and every point within this extensive range being accessible for operative purposes.

The dilatation thus effected is so regulated that the labia and the two extremities of the vagina are put upon the stretch only to the extent desired, which is in strict accordance with the anatomical conformation of the parts, this being of such a nature as to make the instrument *self-sustaining*, one of its peculiarities; another being *elasticity of flexure*. This principle of elasticity has never before been embodied in any form of speculum that I am aware of, and its utility and importance, in my judgment, can not be too highly estimated. Instead of the hard, inflexible blade formerly used, touching only at one or two points soft and delicate structures, we have now the soft, elastic spring adapting itself to all the points of resistance with a uniformity to be attained in no other way.

The indications for complete dilatation of the vagina and vulva I conceive to be four:

- 1st. Elevation of the perinæum.
- 2d. Elevation and support of the upper part of the posterior wall of the vagina.
- 3d. Transverse dilatation of the labia majora and the mouth of the vagina.
- 4th. Distension and steadiness of the upper part of the anterior wall of the vagina, the vesico-vaginal septum.

Now these are the indications to be fulfilled, according to my judgment, independent of any and all efforts of the patient to the contrary; and any instrument, whether *self-retaining* or not, that does not meet these ends, must be regarded as incomplete. With my instrument I claim the accomplishment of all, *the fulfillment of the third and fourth indications* being an advance beyond all other methods, to say nothing of the *self-retaining*

quality of the instrument, which it must be admitted is based upon more correct principles than any plan heretofore presented to the notice of the profession.

As regards the position of the patient, I propose a few remarks before entering upon the description of our instrument, as I consider this of no little consequence in certain operations, especially those upon the anterior wall of the vagina.

While our speculum is equally well adapted to all positions, I prefer in the description and application of it to consider the patient resting upon her knees and breast, the body forming a right angle with the thighs, and the thighs a right angle with the legs. This position I now prefer to all others, and with propriety it may be termed the *right-angle position upon the knees*.

In no other position, according to my judgment, whether chloroform be used or not, can the patient be made so easy, comfortable, and secure, and without the aid of assistants.

We have come now to the most difficult part of our task, a description of this speculum.

Fig. 1 (half size) represents a front quarter view of the instrument, expanded as when introduced for use.

The general features of it as shown, are outstretched arms, expanded wings, rolling surfaces, standing and projecting arches, broad, contracted, narrow and rounded points; and the thumb-screw arrangement indicates that the whole is moved by a system of leverage.

The proportions of the instrument are, I think, in harmony, and the construction will be found to be in strict accordance with well-known geometrical principles. It may be said to be composed of two simple, similar bent steel levers, about 8½ inches in length, rounded and flattened at certain points, having elasticity of flexure, and connected at one extremity by a pivot joint G, around which they revolve horizontally.

For description, therefore, as is most naturally suggested from its general outline, it may properly be divided into the foot and heel, including thumb-screw and short levers, and into the legs,

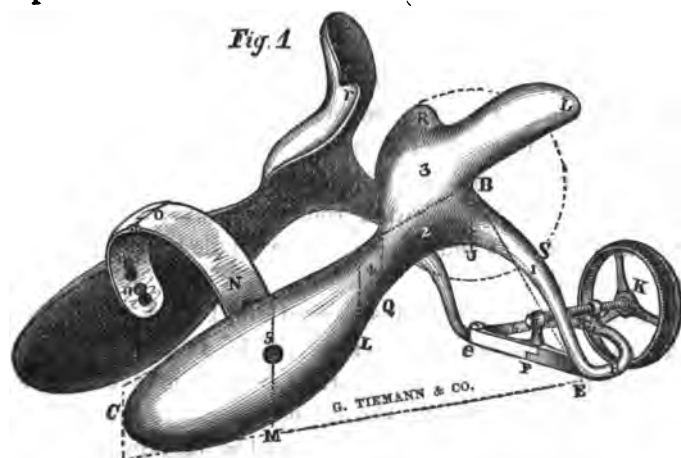
body, wings, neck, and arms or blades, as indicated by Figs. 1, 2, 3, 4 and 5.

The description of the foot and heel we will defer until we come to study the principle of action.

I shall consider B the centre of the instrument; the plumb line U, dropped from it, the balancing point.

The legs where they leave the heel E and *e* are rounded, a quarter of an inch in thickness, and for a short distance ascend almost perpendicularly, inclining slightly forward and inward. In the next part of their course they become gradually more and more flattened, extending now almost directly forward, only inclining slightly outward.

The line U indicates their union with the body. Their length is two inches and three-eighths. This part of the instrument applies to the purpose of dilating the vulva or labia majora. The lower part of the legs falls just within the fold formed by the inner part of the thigh and the labia, while the upper portion passes between the latter about the commencement of the



nymphæ, and thus reaches the mouth of the vagina, which corresponds exactly with the plumb line U, the balancing point.

The body is included between the two lines U and Q, and is somewhat quadrangular in shape, rounding on its outer surface and hollowed out on the inner side to the same extent as the up-

per part of the leg and the wing standing upon its upper edge, as indicated by the line B Q. This part of the instrument is applied directly to the transverse dilatation of the mouth of the vagina. The wing is of a peculiar shape, and for the sake of description may be divided into the lower and inner portion and the upper and outer portion. The first part presents a rounded surface from right to left, and up toward the projecting angles R r looks almost directly forward. These projecting arches are about three-quarters of an inch wide, and at the angles are about three-quarters of an inch above a line drawn across from centre to centre. This part of the wing, with its fellow of the opposite side, gives support to the perinæum, which lies across from one to the other, just as the bridge spans the stream. The upper and outer portion of the wing looks forward and outward, and is intended to support the buttock. The neck between the two plumb lines Q, L, is about half an inch in length and width, and as shown is the most contracted part of the arms. This point comes just within the mouth of the vagina, and consequently prevents painful stretching of the parts here in the expansion of the blades.

The arms or blades form the widest part of the instrument, and are intended to distend and steady the vesico-vaginal septum. They are thin, spoon-shaped, about two inches and three-eighths in length, and at M one and a half inches wide. On the middle of this line is seen the countersunk head of the rivet which passes through here and gives support on the inside to the extremities of the arch N n, connecting the blades at this point. This arch is four and a half inches in length, connected in its middle by a hinge joint O, and about three-quarters of an inch in width. It should be made of steel, and so thin between the joint and extremities as to allow of easy bending in the opening and shutting of the arms. There are two holes near each end, with slits in upper edge to encircle the narrow neck of the rivet when in use. This arch may be used or not, as circumstances may require, it being easily slipped off or on. When used it is intended to elevate and support the upper part of the posterior wall of the vagina, it being the fulfillment of our

second indication. It is easily elevated or depressed with the finger, and when in position stands about one inch above the edges of the blades, and on a plane slightly above that of the projecting angles of the wings R r. Nearly the whole of the instrument, as will be seen by reference to the figure, is included within the legs of the right-angled triangle E B C, only the foot, legs and wings being outside. The circle D R Q S has its centre at B, the centre of the instrument, with a radius of one inch and a quarter, the length of the line of union between the root of the wing and the body. This circle, as is seen, includes nearly the whole of the wing, the body, and a large part of the leg. This angle and centre of circle, I should observe, are important points to be borne in mind in the manufacture of the instrument. They should be preserved in all cases, it matters not what change may be found necessary as regards proportions.

The instrument, when set upon a table, has its foot flat upon the surface, touching nowhere else excepting at the point near the ends of the blades, as indicated by the base line of the angle E C, which measures four inches and three-quarters. The leg E B measures two inches and three-quarters, and C B four inches and a half.

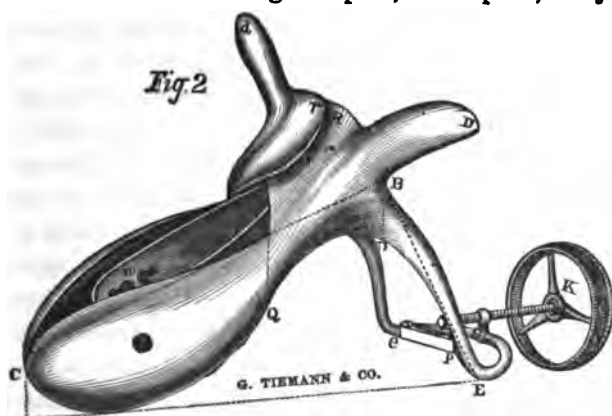
From centre B to corresponding point of opposite side, the distance is two inches and a quarter. Between tips of wings D d, four inches and a quarter. Between commencement of neck Q, three inches. Between blades at M, measuring from outside to outside, four inches. Between points measured in the same way, three inches and a half.

The instrument is to be made of steel, electro-plated, as light as is consistent with the strength required, there being certain points, of course, where this is an important feature; for example, the foot and heel of the instrument.

The *elasticity of flexure*, it should be borne in mind, extends only from the heel to the extremities of the blades, increasing of course in extent as the latter points are approached. The limit of elasticity at the points of the blades should not exceed three-quarters of an inch under any amount of resistance here, and this should be borne in mind in *tempering* the instrument, other-

wise the limit might be exceeded, and the usefulness of the instrument thereby endangered.

Fig. 2 represents the instrument closed, ready for introduction or withdrawal. It being collapsed, so to speak, every point



of the opposing sides is brought into closer relationship. The elevated arch standing above the edges of the arms or blades, as seen in the first view, is now folded within them, the upper part of it resting beneath the hugging arches, R r.

In this view of the instrument, there are three divisions made by the two plumb lines U and Q, which are important as directing attention to the uses of the respective portions. The leg, for example, included within the first division, performs the part of separating the *labia majora*. The wings and body of the second division elevate the *perinæum*, and open the *mouth of the vagina*, to the utmost limit transversely. The arms or blades of the third division *unfold* and *steady* the *vesico-vaginal septum*, or upper part of the anterior wall of the vagina, and at the same time give support to the two extremities of the arch which spans the space between them, and receives upon its top the *falling posterior wall of the vagina*.

The thumb-screw K is seen reversed to its fullest extent, and the two short levers quietly folded within the foot of the instrument, the point P being now in close proximity to the pivot G.

We come now to a consideration of the principle of the instru-

ment, and I will state in the outset, as thus applied it is new and original with myself, it never having been applied before, that I am aware of, by any one, to the purposes of a speculum.

The principle itself, however, is an old one, as regards its application to other purposes. It will be familiar to those who may have seen a certain kind of *cotton press* in the Southern States, in which it is employed, though with a more extensive system of leverage than I have here. I got the idea myself from seeing the above application; and the credit I am entitled to is the modification which I have made of it, to suit the purposes of a *self-retaining speculum*, the principle of which we will now attempt to describe. This principle, as here applied, I have no hesitancy in saying, forms one of the most beautiful illustrations of the parallelogram of forces as producing curvilinear motion that could be conceived, and answers, in the most satisfactory manner, the purpose for which it is here intended.

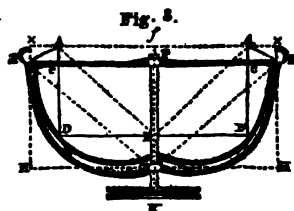
In studying the law of forces, there are several important points always to be borne in mind, whether applied to the rudest lever or pulley, or to the most complex piece of machinery. As these points are or are not understood, depends success or failure.

Professor Silliman, who is authority in matters of this sort, says: "To determine a force with precision, we must consider three things: 1st. The point of application. 2d. The direction. 3d. The intensity or energy with which the force acts."

Inattention to one or more of these rules has, I am satisfied, caused the failure of all previous efforts at getting up a *self-retaining speculum*, to fulfill all the indications previously named. I am free to confess myself that I failed in many of my efforts from this very cause.

My greatest error I now conceive to have been in the point selected for the application of force. Had I the time and space, it might be interesting to show how I labored to extricate myself from this difficulty; but as it is, I shall be content for the present with saying that this instrument, as here exhibited, is not the work of a day, or a week, or a month, but years of patient thought and repeated disappointments.

Let us now turn our attention to the diagram, Fig. 3, which is also a half-size front view of what I have denominated the



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foot of the instrument, here represented closed and expanded, with both legs cut off at the heel E and E.

The two sides E h G together form, as is seen, almost a semi-circle, with a radius of one and a quarter inches. In the middle, where they unite, is the

pivot joint G, and here is the point of our application of force.

These arms are inflexible, somewhat round, and almost of uniform thickness, not exceeding a quarter of an inch anywhere, excepting at the pivot and ends, where they swell out a little, to give additional strength.

Within these arms is situated our plan of leverage for opening and shutting the instrument. This consists of a double-threaded thumb-screw K, about one inch and three-quarters in length, and three-eighths of an inch in thickness, with an open wheel on the outer end, one inch and an eighth in diameter; and of two short, stout levers, one and a quarter inches long. These latter are connected at one extremity by a joint at the heel E and E, two and a half inches from the pivot G. At the other extremity they are connected together by a joint at P. Rising above, three-eighths of an inch, is to be seen the connecting screw of this joint, expanded, and perforated to receive the extremity of the thumb-screw, upon the extremity of which, on the outside, is placed a small tap. In the same manner the thumb-screw passes through the connecting pivot-screw G, which is the nut, the former being free to move both forward and backward.

Let the two lines now on each side, A D and P D, represent the instrument closed, A f and P f completing the rectangle or square. The diagonal P A will then represent the situation and relationship of the two short levers previously described.

To open or expand these arms now to the full extent, we have, as would appear, two forces, A P and A P, acting at an oblique angle, a very great mechanical disadvantage, as will be

readily understood, for "when a force acts upon a body at any other than a right angle, a part of its effect is lost."

The difficulty, however, is overcome and the accomplishment of our purpose rendered easy by resolving each of these oblique forces into two, Pf and Af , one parallel and the other perpendicular to the point to be moved. This is effected by revolving the thumb-screw K until it assumes the position of $G F$, and the short levers that of $E F$ and $B F$. The latter together now form a straight line—a relationship that places the whole instrument in a state of equilibrium; the weight of the two sides, being equal, is exactly counterpoised at F . Complete now the parallelogram $E H G$, and we have the diagonal $G E$, the resultant of the two components thus applied, which give us the diagonal or oblique relationship of the arms of the instrument which is here so beautifully carried out. In this resolution of forces, therefore, our power is seen to pass through the arc of a circle which is the diagonal of the small parallelogram $A c, E x$, the distance $A E$ being three-eighths of an inch. As it is with the seat of power, so it is with every other part of the instrument to the extremity of its blades, which, with varying radii, pass through the arc of a circle the length as well as the velocity of which increases with the distance from the pivot G .

For instance, at the centre or balancing-point of the instrument U , Fig. 1, corresponding to the mouth of the vagina and about one inch from the seat of power, we have the arc increased from three-eighths to half an inch, with a total expansion of the arms at this point of two and a half inches. And at the extremity of the blades, a distance of about five inches from the same point, the arc is increased to one and a half inches, giving us a space between the opposing blades of three inches for operative purposes.

At the two points named the limit of expansion of the blades corresponds exactly with the limit of the dilatation of the mouth of the vagina, and its upper extremity, which alone is sufficient to explain the *self-sustaining* and *self-retaining* feature of the instrument.

In the application of our power then to the thumb-screw K ,

the position of it is most advantageous for producing its maximum effect in collapsing or carrying the two short levers from their oblique relationship to that of right angles with the point acted upon, thus affording an example of increased power with increased resistance. The instrument with the above system of leverage may properly be said to represent a *double bent lever*, the most familiar example of which is the *fire-tongs*. Unlike these, however, it has the power applied on the inside instead of the outside. Alike, though, in the important respect of having the power applied between the fulcrum and the weight or resistance, distinguishing both at once as levers of the third class.

This instrument I shall call a *spring and self-retaining speculum*, as is most naturally suggested from these two distinguishing qualities of it.

I think I may justly claim for this speculum originality in :

1st. The system of leverage employed, possessing as it does regulated and increased power, reduced to the smallest possible compass, and far away from the mouth of the vagina, thus allowing the freest and widest range of manipulation with instruments, compatible with the nature of these parts.

2d. Transverse action of the instrument, with uniformly varying movement of the working-point, extending from the heel to the point of the blades, thus making the lateral walls of the vagina the seat of pressure instead of the anterior and posterior, as formerly.

3d. Complete exposure, at the same time, for operative purposes of the vulva, both walls of the vagina, and the cervix uteri, with the two polished surfaces of the arms of the instrument standing upon the sides, the most favorable position in which they could be placed to secure the greatest amount of reflected light.

4th. Elasticity of the working-point of the instrument.

5th. Being self-retaining in the fullest sense of the word.

6th. Being equally applicable in its use to all positions of the patient.

7th. Allowing all operations to be done without the aid of assistants, or exposure of the person of the patient, further than

the parts immediately brought within the field of observation by the expansion of the arms of the instrument.

All of these points, I am safe in saying, admit of the clearest demonstration.

Remarks.—Having now completed the description of our *spring and self-retaining speculum*, it remains for us to offer a few additional remarks upon its application in practice, and the circumstances under which it was first done; for it is reasonable to conclude that the question will be asked, where is the proof of all the advantages which have been portrayed at such length?

The only proof I propose to offer, and I think this conclusive, is the application of the instrument in a single case, the very one to which it was adapted in completing it as here shown. This case being an extreme one, as will appear, has the advantage, I think, of rendering the proof convincing to the practical mind, and lessens the necessity, I conceive, of additional corroborative testimony to satisfy even the most skeptical. The case referred to was one of vesico vaginal fistula occurring in a very stout, fleshy woman, weighing upwards of two hundred pounds. Early in October last she was admitted into that admirably conducted institution under the direction of the Sisters of the Hoboken St. Mary's Hospital, where my patients are now received.

The fistula was of six or eight months' standing; small, not larger than a pin's head, and occupied what we would ordinarily term a favorable position, being some three inches above the *meatus urinarius*, and near the edge of the septum, upon the left side.

The peculiarity and difficulties of the case were these: Anteversion of the uterus; a convoluted or folded condition of the two opposing walls of the vagina, which was of immense size; and a plaited condition of the edges of the fistula, and the parts immediately surrounding it.

Assisted by Drs. Finnell, Connolly, Lynch, Metcalfe, and several other medical gentlemen of New York, and Dr. Chobert, of Hoboken, I undertook my usual operation, the patient resting upon her knees and elbows. My fourth size of the lever specu-

lum, with a blade four inches long, one and a half inches wide at the heel, and one and three-quarter inches near the point, was employed; and although of such large size, this instrument, with spatulas and depressors, brought to bear from various points by assistants, afforded us only an imperfect view of the very small fistula. The upper part of the posterior wall of the vagina came down in such immense folds over the end of the instrument, met by the same folded and protruded condition of the anterior wall, under violent and almost continuous expulsive efforts, that it became quite impossible to commence the process of paring the edges of the fistula, and to complete it in a regular manner. This stage of the operation, however, was gone through with after the length of time indicated, only to be followed by a still greater difficulty and delay in the next—the introduction of our sutures—only three being called for. The patient, at this stage of the operation, was placed upon her side and chloroformed, which, however, afforded us no relief from the surrounding difficulties.

Suffice it to say, the operation, after three hours, with five or six assistants, was finished, though in the most unsatisfactory manner it had ever been my misfortune to encounter before.

Now, after all our labor and annoyance, I felt that a failure was inevitable, and so expressed myself to the gentlemen present. The removal of our suture apparatus on the eighth day proved too truly the correctness of our misgivings as to the final result. There was a total failure.

With a full understanding now of the difficulties of the case, and seeing the result of the extraordinary efforts which had been made in this operation, I contemplated, I frankly confess, another operation with dread and ill forebodings.

I determined, however, that I would not undertake another until I could devise some plan of securing the patient effectually in the right-angle position upon the knees, which I had had in contemplation for several years; and, if possible, to complete my new speculum, believing that no better case could be found to test its merits.

As to the speculum, this was not so easily completed, as it involved a radical change in my original plan, arising from a fundamental error in its construction, which I had not discovered until this particular juncture. An explanation of this change would necessarily require a description of the instrument and all the alterations made in it from the beginning, which would far exceed the limits assigned to these remarks in the outset.

On the 20th of November it was so near completed as to enable us to use it.

The patient was now placed in our new position, and thus secured upon my *thoracic rest*. The position was now found to be admirable, and the confinement of the patient perfect.

Chloroform was next administered, and our speculum, as here shown and described, was introduced and expanded to the fullest extent. A reference to the limit pointed out on a former page will give some idea of the enormous size of the vagina. In short, the dilatation of the vagina, regarding all the indications which we have pointed out, was most complete and satisfactory. The insignificant fistula which we had labored so hard to bring into view a few weeks before and failed, now showed itself in its fullest dimensions, steady and immovable, even in the very face of the most violent expulsive efforts of the patient from bearing down and vomiting, before which we stood almost powerless and helpless in the previous operation, with every assistant that could be employed.

I now viewed the parts of operative procedure for the first time with a feeling of certainty as to the result. At my leisure I began the operation, and quietly completed it by my ordinary method, without the aid of an assistant, further than to wash sponges and give chloroform.

In twenty-five minutes our patient was removed from the table and placed in bed, totally unconscious of what had been done. Ten minutes of this time, I should observe, were lost in consequence of a little hæmorrhage which had to be controlled before introducing our sutures.

Thus was achieved, I conceive, the greatest triumph of our professional life.

As regards the ultimate success of this instrument, from what we have seen thus far in its application, I think I can very confidently recommend it to the general practitioner as well as the surgeon, as likely to give satisfaction in all cases where a speculum requires to be used.

That a diminution of the size of the instrument shown here will have to be made to suit the majority of cases I am convinced. This is an extra large size. A medium size, I think, will cover four-fifths of all cases; one smaller size, and a larger one, such as here shown, covering the other fifth of the cases. In this last class we include such cases as the one above detailed, and all cases with shortening of the vagina resulting from injury of its walls or otherwise. As soon as we can determine properly the alterations necessary to be made in the proportions of this instrument, in order to reach the other two sizes, we will have them made.

The instrument, when completed in steel and electro-plated, as designed, will not, I am satisfied, exceed the weight of this our original pattern, which is only eight ounces, being two ounces less than the ordinary lever speculum.—*New York Medical Record*.

SCUPPERNONG GRAPE.

This is said to be the most remarkable grape in the world, possessing more good qualities and fewer imperfections than any other grape known. A late writer, Mr. Miller, of Iuka, Miss., says:

The Scuppernong Grape is of Southern origin, and is destined to revolutionize grape growing and wine making in America. It yields more than any other vine, often producing annually from twenty-five to fifty bushels of choice, sweet, delicious, rich, luscious, fragrant grapes, of a large, round form. It is excellent

for table fruit, for dessert, for preserving, or for market, and will keep late. There are three varieties, white, black and yellow, each yielding choice berries and magnificent wine. The Scuppernong wine can be made so fine as to excel all others on this continent. The vine needs no pruning, no training; it never mildews, never rots, and never fails to yield a crop. It will grow anywhere that cotton or corn will. One acre of vines will pay better than one hundred in corn or cotton. Two or three vines produce fruit enough for an ordinary family. A single vine will make from one to two barrels of wine. It will grow and fruit for a hundred years. It is emphatically the poor man's friend. Every man who owns a rod of ground should own a Scuppernong vine. It is the *grape* of all grapes.

MUSCLE SUGAR.—In August, 1861, G. Meissier announced his discovery of a true sugar in muscle. Dr. J. Rauke has re-investigated the subject, and fully confirms Meissier's supposition. The following propositions are regarded as established: First, That there exists a true fermentable sugar in muscle. Second, That the amount of this sugar is increased by muscular action, including tetanization caused by strychnine or electricity. Third, That the liver has no effect in causing this increase; for the sugar is proved to arise in the muscle itself, and from the muscular substance —*Amer. Jour. Med. Sciences.*

CUBEBIC ACID.—The curative power of cubebs has been found to reside in cubebic acid, a crystallizable constituent, and not in the volatile oil or resins. From eight to thirty grains of this in pill, in twenty-four hours, completely cured three out of five patients in six days. In the remaining two the discharge was very much diminished, so that a few injections removed it.—*Amer. Jour. Med. Sciences.*

THE MEDICAL REPORTER.

ST. LOUIS, MARCH 1, 1868.

Our Journal.—With the present number we enter upon another year of our journal. Thanks to the encouragement of our already numerous patrons and friends, we commence another volume with brightened prospects. Our undertaking, which at first might have borne the character of an experiment, is assured in its success, as well by its contributors as by those who have favored us with more material aid. Commencing at a time when journalism here, as elsewhere, was at a low ebb, we thought that an effort should be made to revive the animus of the profession by giving it a way and means by which to rouse it into action. A semi-monthly had never before appeared west of the Mississippi; it required not a little decision to break in upon the old routine of monthlies and bi-monthlies, and give to the medical world here the information which, for the very reason that it appeared as it was gathered, must be more attractive and valuable.

We do not hesitate to say that we have been supported in our views, and may we not add, that the time had come for something more to be done in the way of journalism in the West, and the appreciation with which our efforts have been received has fully sustained this supposition. We have secured the co-operation of some of the best medical talent in the profession, and our pages will be replete with original articles in every department of medical science. It is our desire to encourage medical men in all parts of the country to report cases of interest and thus add their part to the great fund of practical experience as well as a record of their professional zeal and observation.

We have little to say of what we shall do for the future; we shall try, with the time at our disposal, to make the *REPORTER* acceptable and valuable; all the means within our reach will be wrought out for the benefit of our readers. Our Publisher is animated by the desire for constant improvement, and with this

feeling we shall not be backward in carrying out to the full our purposes and plans. We afford to the public every year a volume of nearly eight hundred pages of reading matter; there is no lost space, every page is full of legitimate medical information. This said, we can claim for ourselves quite as much, if not more, size than any journal in the West. We shall devote more attention, from increased facilities, to the department of foreign medical literature; nor by this do we wish to overlook the observations of the profession at home, for we deem them of such importance as to quite balance the oftentimes fancied advantages which may accrue from abroad.

We would also call attention to our Advertising Department, which we have endeavored to make a reliable Medical Directory, and thus become an addition of real value to our readers.

We renew our thanks, therefore, to the medical public for the genial countenance that it has been pleased to bestow upon us, and enter upon another year with the full trust and confidence which the past has inspired.

Defective Alimentation a Primary Cause of Disease.—

We would call attention to the above article, by Professor Salisbury, as being of more than ordinary interest. It will extend through several numbers. Prof. Salisbury's researches are at all times possessed of more than ordinary importance from his great experience in the use of the microscope, and the extent and number of his observations. Few are capable of such investigations, and still less whose opinions are worthy of credence or weight. It requires a knowledge both of the normal and diseased conditions of the blood, and other tissues and substances examined, to arrive at useful or rational conclusions, and this knowledge Prof. Salisbury possesses in an eminent degree.

Hypodermic Injections of Morphine, to the number of two hundred weekly, are employed in the cancer wards of the Middlesex Hospital.

Agents for our Journal.—We are pleased to announce that we have made arrangements with the house of Bailliere Brothers, New York, to act as agents for our work, as also their foreign houses at Paris, London, Madrid and Melbourne. We would call the especial attention of our friends in Europe to this fact, as all foreign books and packages can be sent to us through the agency of the above houses. We would also call the attention of European publishers to our work as a favorable means of placing their publications before the American public, and on receipt of favors will return them due and ample notice and acknowledgment.

Bailliere Brothers, Publishers, New York City, previous to their removal to their new house, are offering their large stock of foreign and American books at greatly reduced prices. Their stock of medical and scientific works is very large and varied, especially so in foreign works. Our friends would do well to write for a list, and they can order either by mail or express. This is a rare opportunity for physicians to stock their libraries at a very low price.

George Tiemann & Co., 67 Chatham street, New York, manufacture that most excellent Uterine Speculum of Dr. Nathan Bozeman, M. D., which is illustrated on page 20 of this number of the REPORTER. The above house also keep on hand a large and varied assortment of all kinds of surgical and dental appliances, paying especial attention to the getting up and manufacturing of new and improved instruments. Catalogues, with prices, can be obtained by mail.

A Russian Female Physician.—A young Russian lady has just passed her examination as Doctor of Medicine at the University of Lubeck.

Ossified Placenta.—Dr. Galloway, of Canton, Miss., has met, during twenty years, with eight cases. In every case the child was well developed, and the mother convalesced as usual. He makes it a rule to inspect the placenta in all cases.—*American Journal Medical Sciences.*

VITAL STATISTICS OF ST. LOUIS.

For the month of January, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	224	Still Born.....	85
White Females.....	190	Under five years of age.....	200
Colored Males.....	81	Between five and twenty years...	45
Colored Females.....	22	Between twenty and forty years...	98
Born in the United States.....	818	Between forty and sixty years....	62
Born in Germany.....	72	Between sixty and eighty years... 21	
Born in Ireland.....	62	Bet. eighty and one hundred y'rs	6
Born in other countries.....	25	Total.....	467

DISEASES.

Abscess.....	2	Fever Puerperal.....	8
Apoplexy.....	6	Fever Typhoid.....	41
Asthma.....	2	Gastritis.....	2
Atropia.....	2	Gangrena.....	2
Bronchitis.....	11	Hemorrhage.....	1
Burns and scalds.....	5	Hepatitis.....	5
Cancer.....	4	Hydrocephalus.....	4
Carditis.....	3	Hydrothorax.....	2
Cerebritis.....	6	Inflammation.....	6
Convulsions.....	28	Jaundice.....	3
Congestion of Brain.....	12	Labor.....	1
Croup.....	8	Laryngitis.....	1
Debility.....	10	Marasmus.....	24
Dentition.....	4	Meningitis.....	13
Delirium Tremens.....	2	Metritis.....	1
Disease of the Heart.....	6	Myelitis.....	2
Diarrhoea.....	21	Old Age.....	3
Diphtheria.....	3	Paralysis.....	6
Dropsy.....	5	Peritonitis.....	5
Drowned.....	1	Pertussis.....	6
Dysentery.....	10	Phthisis.....	50
Dyspepsia.....	3	Pneumonia.....	50
Eclampsia.....	2	Poisoning.....	1
Encephalitis.....	4	Premature Birth.....	4
Enteritis.....	3	Scarlatina.....	4
Erysipelas.....	4	Scrofula.....	2
Fever Congestive.....	3	Trismus.....	5
Fever Intermittent.....	7	Ulceration.....	1
Fever Remittent.....	3	Wounds.....	4

Total number of Deaths for January, 1866.....415

Total number of Deaths for January, 1867.....380

Total number of Deaths for January, 1868.....467

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

VOL. III.

ST. LOUIS, MARCH 15, 1868.

No. 2.

DEFECTIVE ALIMENTATION A PRIMARY CAUSE OF DISEASE.

By J. H. SALISBURY, M. D., Cleveland, Ohio.

[Communicated for the St. Louis Medical Reporter.]

Continued from page 16.

EXPERIMENTS CONNECTED WITH THE PRODUCING OF THE CHRONIC DIARRHEA OF ARMIES, WITH ITS INTERNAL ABNORMAL CONDITIONS, BY FEEDING UPON ARMY BISCUIT.

It was found that whenever soldiers were thrown largely upon the use of hard bread or army biscuit as a diet, a peculiar train of abnormal manifestations presented themselves. These are:

1. Constipation.
2. This constipation is soon followed by fermentative changes and the development of intestinal gases and yeast plants in the food, too long delayed in the alimentary canal.
3. These fermentative changes are always worse towards evening and during the night, and go on increasing from day to day, till
4. Finally, the gases and yeast plants developed produce so much intestinal irritation that diarrhea ensues, which soon becomes chronic and not at all amenable to the treatment of ordinary diarrhea conditions.
5. Accompanying the fermentative changes is always a paralytic tendency, more or less strongly marked. This is mani-

fested in the alimentary canal, and especially in the larger intestines; next in the extremities, the legs prickling and "getting asleep" frequently, with ringing in the ears and a numb, mixed-up, or confused feeling, in the head, &c.

6. A cough, with more or less hoarseness, usually sets in, especially during the night and on getting up in the morning, accompanied by the expectoration of a thick, cream-colored, sweetish mucus.

7. This is followed by more or less constriction in breathing, with frequently palpitation of the heart on any excitement.

8. After the diarrhea sets in there is generally a remarkable tendency to fibrinous depositions in the heart (thrombosis), and to the clogging up of the pulmonary vessels with fibrinous clots (embolism), with pains and aches in extremities and back.

To demonstrate more positively that these abnormal conditions had their origin in the too exclusive use of army biscuit as a food, it was determined, if possible, to institute a series of experiments upon the exclusive use of this kind of food upon strong, healthy men, in a healthy locality and free from the enfeebling influences of army life. Accordingly, on arriving in Cincinnati, I engaged the services of two strong, healthy men, of good habits and in the vigor of life, for this purpose. The experiments were conducted with watchful care, from day to day, and the results were most convincing and conclusive in favor of the previous observations upon the soldiers, as will be seen by the following daily record of the experiments:

EXPERIMENT 1.—Mr. H—, age 36, height 5 feet 10 inches, and weight 150 lbs. October 12th, at noon, commenced feeding him entirely on army biscuit, with a little cheese. For drink used water, to which, at dinner and tea, about one ounce of good whisky was added.* Seemed to relish the new diet, and ate heartily. Hours for meals 7 A. M., 12 M. and 5 P. M. The night of 12th slept well. The following morning had a passage from bowels at the usual time, but less free than normal.† Felt well

* Was accustomed to the taking of one or two drinks of whisky daily. For this reason the whisky was added to the amylaceous diet.

† Was accustomed to having a healthy stool regularly every morning.

during the 13th, eating heartily and sleeping well at night. On the morning of the 14th was constipated, having no passage from the bowels, although he repaired as usual to the water-closet. Felt well during the day and night of the 14th. On the morning of the 15th, with difficulty, had a scant passage of pale, plastic feces. During the 15th felt occasionally a slight dizziness and less muscular vigor than usual. Slept well during the night. Had no stool on the 16th. Began to have some rumbling in the bowels toward evening from the movement of wind, which appeared to be generated in the small intestines principally. During the evening ate a couple of apples. Slept well during the night. On the morning of the 17th had a very scant passage of pale, plastic feces. After passage felt a throbbing and heat in the lower portion of the large intestines. Toward and during the evening there was considerable flatus, with some eructations of wind. Before retiring ate an apple and drank freely of water. Slept well. On the 18th had no passage. Felt a dizziness all day, with considerable muscular debility. Appetite excellent. Still relishes the food, but would like it better if he had some meat with it. Lower bowels feel numb, distended and torpid. Bowels distended with wind during the evening and night. Slept well. Had no passage during the 19th. Felt a dizziness all day, with a want of muscular vigor. Exercised freely in walking and felt better. Slept well during the night. On the morning of the 20th had a difficult, scant passage of pale, plastic feces, after which had a heat and throbbing in lower bowels, which were inactive and partially paralyzed. On the evening and night of the 20th bowels much distended with flatus, with eructations and passages of wind. Slept well. 21st had no passage. 22d had no passage. Yesterday and to-day has had a numb, dizzy feeling in the head, which is partially dissipated by walking vigorously. Appetite good. On the morning of the 23d had a difficult, scant passage of pale, plastic feces. Lower bowels more inactive than usual. Passed considerable wind. During evening and night troubled much with flatus. Slept well. 24th had no passage. Felt well, but not so strong as usual. Head feels numb and legs frequently get asleep.

40 *Defective Alimentation a Primary Cause of Disease.*

During evening and night bowels distended much with wind, which appeared to be in constant motion. 25th had no passage. Felt well, but less vigorous than usual. Peculiar numbness about head. Appetite good. Upper bowels and stomach distended with flatus in motion during evening and night. Ate a couple of apples before retiring and walked about two miles. Rather wakeful, yet felt well. On the morning of the 26th had a difficult, scant passage of pale, ash-colored, plastic feces. With the exception of numb sensations in head, legs and lower bowels, felt well. Appetite good. Tongue clean. Very eager for meat. During evening and night bowels and stomach much distended with wind, on account of which sleep was disturbed. 27th, had no passage. Felt a heat and throbbing in the lower part of the intestines. Appetite good; less vigorous than usual. Wakeful during night. 28th, had no passage. Tongue clean, with a red border and streak along the centre. Appetite good. Considerable muscular debility. Numb feeling in head, and limbs liable to get asleep. Bowels and stomach distended with flatus during the evening and night. Wakeful. 29th, throbbing and heat about the rectum. Had a rather more free passage than usual during the morning. Appetite good. Considerable muscular debility, with numb sensations. Considerable thirst. During the latter part of day, and evening, and night, bowels much distended with flatus. Wakeful, but felt well. 30th, no passage from bowels. Felt about the same as on the 29th. Wakeful at night. 31st, quite a free passage during the morning. Considerable heat and throbbing about the lower bowels. Large quantities of flatus developed in stomach and bowels during evening and night, with eructations and passages of wind. Wakeful. Aroused about 4 A. M. on the morning of November 1st, with a severe bearing down pain in the lower bowels and a desire to go to stool. Had a copious passage, which was thin and watery, and of a pale ash color. Passed large quantities of flatus. Heat and throbbing pain about lower part of large intestines. Small intestines and stomach distended with flatus before the stool. The free passage relieved these unpleasant symptoms so that he fell asleep readily again and slept

till 7 A. M. Got up free from pain and feeling well, save the disagreeable paralytic symptoms. Appetite good. Somewhat debilitated. Tongue clean, with red streak along the centre. Flushes of heat over the body intermitted with chilly sensations. Bowels distended almost constantly with flatus. Much worse during evening and night. Retired early and slept well till 3 A. M., November 2d, when he was awakened by a severe bearing down pain in the lower bowels, with an urgent desire to go to stool. Had a copious watery discharge, with considerable wind, which relieved the pains. Considerable heat and throbbing in lower part of large intestines. Felt well during day. Appetite good. Bowels distended with flatus during the evening and night. At 8 A. M., November 3d, had another profuse passage of pale, watery feces. Considerable heat, and bearing down, and throbbing in lower part of large intestines. Much debilitated during the day, but appetite good, and free from pain. Tongue clean, with a red streak along the centre that felt sore. On examining the feces with the microscope, they were found to have all the peculiarities of chronic diarrhea. During the afternoon, evening and night the stomach and intestines were very much distended with gases, producing considerable pain. Rather wakeful. Called up on the morning of the 4th, about 2 A. M. Had a profuse passage of thin, pale, watery feces, accompanied by much wind. Between this and 10 A. M. had six profuse evacuations of the same character, after which felt better. Fearing to carry the experiment further in this case, I gave him, on retiring, a cathartic dose of Rochelle salts, which operated freely. The following morning I ordered for him a full breakfast of ham and eggs, with tea and potatoes stewed in milk. Was ravenously hungry and ate a hearty meal, after which felt much better. Had no further evacuation after 10 A. M. during the 5th. At 3 P. M. ordered six soft boiled eggs, with water. These lay rather heavy on the stomach, producing some sour eructations. Ordered him to walk briskly for two hours, which promoted their digestion. Retired at 9 P. M. feeling quite well. Slept soundly. November 6th, 7 A. M., soon after rising, had a copious passage of thin, watery, and rather pale feces, but look-

ing much better than the passages yesterday morning. They had still, under the microscope, the characteristic marks of chronic diarrhea stools. There was considerable pain previous to the passage, and heat and throbbing in lower bowels after, but no tenesmus. Tongue clean, with red streak along the centre and red edges. Made a hearty breakfast on ham and eggs, toast and tea, after which felt better.

From this time he continued the albuminous animal diet, eating freely. Appetite remarkably good. Each day improvement was noticed in the tone of the bowels and in the appearance of the discharges, and in a lessened fermentative tendency in stomach and intestines, with a decrease of *torrula* cells and colloid (gelatinous) matter, and in an increased tonicity of the muscles generally.

November 9th had quite recovered, so that the passages had assumed their normal appearance and consistence; and after this they came on at the usual hour, viz., every morning before breakfast. The tongue became natural in appearance, the countenance flushed, the biliary secretions natural, and the feces lost all the characteristics of those of chronic diarrhea.

Here is an interesting instance of the bringing on of chronic diarrhea by the use of dry army biscuit as a constant food. The subject was a strong, healthy man, in the prime of life, who had been used to the substantial diet of the active business men of our western cities. From the commencement of the army biscuit diet to the time when the discharges assumed a morbid chronic diarrhea type was nineteen days. The fermentative condition and the production of *torrula* cells in the bowels commenced and showed themselves in a marked degree on or about the sixth day, and continued to increase until the army biscuit was laid aside.

The first abnormal condition produced by this diet was constipation, with a partial suppression of the biliary and intestinal secretions. This left the alimentary matters in the intestinal canal an unusual time, during which fermentative changes were excited. This fermentative condition increased daily till the alimentary canal became filled with yeast in a constant state of

fermentative excitement, disengaging large quantities of carbonic acid gas, which distended the bowels with flatus. This fermentative influence appeared to be finally imparted to the epithelial tissues of the mucous intestinal membranes; especially was this the case in the large intestines, where the hardened feces remained and accumulated an undue time.

Just previous to the commencement of the diarrhea, and afterward, there was a general paralytic tendency, especially marked in the intestinal walls, they losing their normal sensibility and contractility, under the excitant and poisonous action of the carbonic acid and yeast plants developed during the fermentation of the amylaceous alimentary matters.*

About the time the diarrhoeic discharge commenced in this case, there came on a hoarseness of the voice and a dry, constricted feeling about the pharynx and larynx. This was followed by a soreness of the throat, which extended into the bronchial tubes and lungs, accompanied by a thick, ropy, sweetish expectoration, and considerable night and morning cough, with oppression and tightness about the chest. This affection was different from any cold, and continued while the diarrhea lasted. There was, also, on any excitement, palpitation of the heart. I have noticed the same pulmonary derangements in all well marked cases of chronic diarrhea, where I have been able to accurately trace them back to their incubative stage.

EXPERIMENT II.—This experiment was performed on a strong, healthy, middle-aged man, in the same way as the previous one, and corresponded so closely in its results with Experiment I that it is unnecessary here to say anything more than refer to the preceding detailed description.

The diarrhea in this case commenced on the twenty-first day of feeding on army biscuit diet.

EXPERIMENT III.—This experiment was performed on myself. Diet same as in Experiment I, and in all essential particulars the resulting symptoms were so similar that it would be repetition to describe them in detail. Flatulence and constipation

* In severe forms of this disease the large intestines and the sphincter ani become frequently so paralyzed that the feces pass involuntarily.

commenced on the third day. The diarrhoea commenced on the eighteenth day by a single profuse discharge in twenty-four hours, and this occurring in the latter part of the night. Extended the diet to the twenty-fourth day, on which the passages had increased to seven in the twenty-four hours. On the twenty-fifth day, after a full dose of Rochelle salts, put myself on an albuminous diet, which soon restored the alimentary canal to the normal state.

POST-MORTEM APPEARANCE.

Lungs.—These are usually more or less invaded by either the clogging of the pulmonary vessels with small fibrinous clots (emboli), or tubercular deposits on the lung tissue, or both. Where the disease had continued for any great length of time, scarcely an instance is found where there is an entire absence of pulmonary complications. The pulmonary and bronchial membranes present indications of more or less irritation, and frequently something like an exudation is noticed creeping up the pharynx into the fauces and then dipping down into the larynx and trachea. This apparent exudation is *not* one in fact, it being composed—in every case I have met with—of torrula cells, and developing spores and filaments of a species of pennicellium; both of which indicate a saccharine or glycogenic and fermentative condition of the mucous membranes and their secretions. These apparent exudations—composed of yeast plants—creep up along the oesophagus into the pharynx and fauces, and then dip down into the larynx and trachea. They are unfavorable indications, and appear in the most marked degree a few days previous to death.

They are more prominent in cases of chronic diarrhoea which have accompanied and followed typhoid fever. The fecal matter of such patients is invariably filled with large globules of fat, many of which are covered with a crystalline crust, from which radiate acicular crystals in all directions. These acicular crystals resemble ciliæ, giving to the large fat globules the appearance of being animalcular bodies.

The lungs are frequently found filled with small tubercles, and

sometimes large ones, in process of disintegration. At others, the lungs either contain tubercles or not, and are more or less hepatized; the congestion being directly the result of emboli which have lodged in the minute pulmonary vessels, damming up the blood and preventing its free passage.

Heart.—The heart is nearly, if not always, more or less involved in the disease. There is a disposition to a deposition of fibrin in the cavities of the heart, and in vessels leading therefrom, producing the disease described by Virchow as *Thrombosis*. Granules, layers, conical masses, and ropes of fibrin, usually of a white color, are found attached to the internal surface of the cavities of the heart around the valves; and ropes of fibrin sometimes extend out into the vessels leading therefrom. There is also often more or less serous effusion into the pericardium.

Kidneys.—The kidneys, as a general rule, present no marked organic lesions. They are, however, almost constantly deranged in function, which sometimes result in organic disease.

Oesophagus.—The oesophagus is often congested and apparently inflamed, and frequently covered with mucus, filled with torrula cells and spores of a species of penicillium vegetating, forming a coating to the mucous surface not unlike a diphtheritic exudation.

Stomach.—The stomach is usually thickened, the tubular glands and villi more or less enlarged, and sometimes are found projecting beyond the walls in small fungoid looking masses, wider above and constricted below. These little elevations are from one to several lines in diameter and rise from one quarter to half a line above the surface. They frequently run together, forming larger or smaller patches, and sometimes are thickly set over the entire internal surface of the organ and appear not very unlike exudations, save that they have a reddish vascular appearance. In cleaning the stomach they are liable to be brushed or torn off, leaving ragged or clean edged depressions, resembling the bed of ulcers. In this way many stomachs, when they have been examined only after being cleaned, have the appearance of having been ulcerated, when really no such lesions

existed. The final tendency of the follicular enlargements is to disintegrate, leaving ulcers. Ulceration, however, takes place in comparatively few cases, even where the diarrhea causes death. These follicular enlargements are in some way connected with the formation of large quantities of colloid matter, which is voided with the feces. The formation of this colloid matter is indicative of a kind of *cancerous* tendency in the mucous lining of the intestinal canal. This colloid matter does not materially differ from that developed in goitre or bronchocoele, and from that formed in the fungoid elevations of the mucous lining of the bladder in a peculiar form of chronic cystitis, with a pyelitis as a complication.

The intervening spaces on the mucous lining of the stomach not occupied by the enlarged follicles, are usually more or less of a red beef, ash, or slate color, and sometimes greenish, indicating what appears to be either a high stage of congestion and chronic inflammation, or an anæmic, deadened condition. The walls of the stomach are generally covered with an adherent, slimy, greasy layer, which appears to prevent the food from coming in direct contact with its mucous surface. The internal gastric walls are usually more or less thickened and red. The organ is frequently considerably diminished in size, sometimes to one-third or one-fourth its normal capacity.

Small Intestine.—The mucous lining of the small intestine is usually covered with a thin, slimy, adherent layer of fecal matter, mucous and oily products, which stick so closely that it is only removed by washing or scraping. This is a layer of yeast filled with torrula cells, algoid matter and decaying food, and is very offensive. With the exception of this layer it is entirely empty of fecal matter, but distended with foetid gases. On the removal of this offensive coating, the mucous membrane is generally for the most part quite normal in appearance, save that here or there are inflamed streaks and patches, occasionally partially denuded of epithelium and ulcerated. The ulcerations, when they occur, are mostly in the lower part of the ilium, near the cœcal valve.

Large Intestine.—This is usually very much thickened and the

internal surface covered with a thin, adherent, dirty yellow, pultaceous layer of slimy fecal matter, very offensive in odor and of a greasy feel. This adheres so closely to the intestinal walls that it is removed only by washing or scraping. It is filled with torrula cells, and frequently the vegetating spores of a species of *pennicellium*, with gelatinous matter, with sometimes the *sarcina ventriculi* and a peculiar vegetoline. They were found more numerous toward the stomach than lower down. The inner wall of the large intestine for its whole length, and that of about one-inch of the lower part of the ileum adjacent to the cœcal valve, generally are found more or less thickly studded with ragged patches or fungoid elevations, from one to two lines in diameter, and elevated above the surface about one-fourth to one-half line. These patches are wide above and constricted below, and are composed of the enlarged intestinal follicles and gelatinous matters. In many instances two or more of these patches are found united, forming larger elevations. In cleaning the intestines many of these fungoid elevations are torn off, producing ragged-edged depressions not unlike the beds of ulcers. These enlarged, and highly congested, and vascular follicles, are connected in some way with the formation of colloid matter. This matter is, more or less, tinged with yellow or green. The enlarged follicles may constitute simply a nucleus for its development. It is found disseminated in small lumps and ropes through the feces. In some of the worst forms of the disease the passages are composed almost entirely of this colloid matter. In such cases it is usually of a dirty, green color by reflected light, and a dirty, greenish yellow by transmitted light. The solitary glands are enlarged, and are the seat of a bluish-black pigment, which readily points out their location. Frequently these fungoid elevations disintegrate, leaving ulcers in their places. These ulcers are met with of a large size in many fatal cases. Ulceration, however, is not as frequent in this disease as is generally supposed. The inner walls of the intestine frequently become largely thickened and the calibre lessened. The intervals not occupied by the fungoid elevations

are highly congested and inflamed apparently, having a peculiar dark beef-red color.

Sometimes cases occur where the mucous lining of the large intestines is merely of a beef-red color without any fungoid elevations. In others, the beef-red patches are mingled with others that are greenish, slate-colored, or brownish. The intestinal capillaries are more or less clogged up with emboli, which prevent the free passage of blood, and from which results the peculiar congestion and chronic inflammation, the absorbent power of the intestinal walls being more or less impaired or destroyed.

Mesenteric Glands.—The mesenteric glands of the large intestines are always enlarged, congested, softened and gorged with blood in proportion to the intestinal lesions. The mesenteric glands of the small intestines are frequently also enlarged, softened and congested, but quite normal.

Omentum.—The omentum is generally entirely deprived of adipose, and is highly congested and red.

Spleen.—The spleen is always more or less enlarged, filled with liquid blood, and softened.

Liver.—The liver is, as a general rule, quite healthy and firm. It has more of a yellowish tinge than normal, but is usually otherwise natural in appearance, except when a diabetic condition supervenes, in which case the lobules are more or less congested.

PATHOLOGY OF DISEASE.

This, as indicated by the microscopic examination of the fecal matters, and of the lining membrane and capillaries of the alimentary canal, and of the pulmonary and cerebral capillary vessels and heart, consists :

1. In the development of fermentative changes in the amylaceous food retained an undue time in the alimentary canal, by which yeast plants, carbonic acid, and the other products of fermentation are largely developed.

2. The fermentative changes and the continued feeding upon an amylaceous food eventually results in a highly saccharine or glycogenic and fermentative condition of the system.

3. This fermentative condition tends to accelerate cell development and cell transformation. In the spleen, mesenteric glands and blood vessels, the fibrin cells are more rapidly developed and transformed into fibrin, and there is a strong tendency for it to become organized and aggregated into masses. The result is that fibrinous deposits in the heart, producing the thrombosis of Virchow, and numerous clots (emboli) form and become fixed in the capillary blood vessels of parts the most sensitive, and irritable, and the most irritated.* These increase and soon obstruct the free passage of the blood through such irritated parts, damming it up, producing congestions in the intestinal walls, mesenteric glands and spleen, with more or less congestion of the brain and spinal cord, and a tendency to congestion and hepatization of the lungs from emboli accumulating in the pulmonary capillaries. From the tendency to cell multiplication, produced by the fermentative state of the system, there is a marked disposition to the development of tubercles in the lungs.

The disease is primarily eminently a fermentative one, tending to produce blood clots in the heart and capillary vessels, from which results a variety of peculiar, almost painless, congestions and chronic inflammations, with paralytic conditions.

Here we see why the vegetable acid salts of potassa, soda and iron operate so beneficially upon the disease, in acting as a solvent to the aggregate masses of fibrin in the vascular system and in thinning the blood. We also see why anti-fermentatives are such important and valuable remedies in controlling the fermentative states which are abnormal.

The clogging up of the intestinal capillaries destroys to a greater or less extent the abnormal power of the intestinal walls; hence the reason why it is impossible for the alimentary membranes to either pour out the materials that aid in forming chyme and in producing healthy digestion, or to take up nutrient products. In such cases the conditions are such as to tend to imperfect nutrition and finally to starvation.

* The capillary vessels of the alimentary canal and lungs are generally the first to be clogged up with fibrin. The heart and nerve centres soon become involved to a greater or less extent.

From the clogging up of the intestinal capillaries with emboli (fibrinous clots) the follicles and villi become highly congested, which results soon in chronic enlargement of these organs. As they enlarge they protrude often in patches beyond the level of the mucous surface, forming frequently fungoid elevations, wider above and constricted below. These resemble somewhat patches of exudation, and with the surrounding and subjacent connective tissue, take on a peculiar abnormal action resembling that of some forms of tumors (cancerous), where a gelatinous (colloid) matter is developed.* There are two forms of the colloid or gelatinous disease occurring in the human body, one as a tumor and the other as an infiltration. The latter is most common in the alimentary canal, particularly in the stomach and large intestines. It also occurs sometimes in the bladder. The latter occurs in the glandular organs, peritoneum, omentum, cellular tissue, ovary and bones. In the infiltrated variety the gelatinous matter occupies the meshes of the cellular substance, forming cysts from the size of a mustard seed to that of a hazel nut, which are filled with characteristic jelly-like matter, and which, as they increase in volume, so completely subvert the primitive substance as ultimately to leave no trace of them. This colloid or gelatinous matter is either colorless, whitish, yellowish, or greenish, and is usually of the consistence of jelly. It emanates from diseased connective tissue elements. Virchow rather objects to the term *colloid*, preferring the term *mucus*. The matter does not, however, resemble mucus nearly as much as it does gelatine, to which it bears a close resemblance in appearance. Its most usual seat of development is connective tissue, the distinguishing characteristic of which is its property of affording gelatine. Where the so-called colloid matter is developed in connective tissue, the growth (appears to be allied to homo-plasia) is not usually of that malignant type which it assumes when it is (heteroplasia) developed in bone, cartilage, or other tissue not yielding gelatine normally.

These colloid growths, when seated on mucous surfaces, appear

* This gelatinous matter is made up of large algal cells and filaments enveloped in a jelly-like substance.

in the enlarged form of follicles, villi, papillæ, or warts. These are precisely the forms presented in chronic diarrhea, studding the surface of the large intestines, and often of the stomach, and frequently the lower portion of the ileum. They give rise to or develop large quantities of colloid matter, which is found abundantly scattered through the fecal discharges in lumps and ropes. In the latter stages of severe cases sometimes almost the entire evacuations are made up of this matter, either nearly transparent, or which is of a dark, dirty green by reflected and a dirty, greenish yellow by transmitted light.

In bronchocele a similar colloid matter is developed. The same substance is also formed in a peculiar, quite fatal form of chronic vesico-renal inflammation. In this disease the bladder is found studded with the same kind of fungoid elevations as exist in the large intestines of chronic diarrhea. Frequently in chronic diarrhea these fungoid elevations disintegrate, leaving in their places ulcerated depressions, in which cases pus will be found in the feces frequently streaked with blood. Ulceration, however, is not as frequent as is generally supposed. In cleaning the intestines for wet preparations the fungoid elevations are frequently torn off, leaving either smooth or ragged edged depressions resembling ulcers. These are often taken for points of ulceration.

The diseased portions of the alimentary lining are a dark, livid red, a slate color, ash color, or greenish. The solitary follicles are enlarged and frequently the seat of pigment deposits, so that the locality of each can be readily recognised with the unaided eye by the presence of a bluish-black dot.

Every and all remedial means that have a tendency to produce an astringent, soporific, or congestive influence, aggravate the disease. The great prime objects are to subdue the fermentative tendency; to dissolve the aggregated masses of fibrin in the clogged up capillaries, and to supply that kind of diet the want of which has caused the disease. Hence the reason why an albuminous animal diet, with non-amylaceous vegetables in small quantity, anti-fermentatives and the vegetable acid salts

of the alkalis and iron are so valuable and produce such charming results.

Cause.—The primary cause of the so-called chronic diarrhea appears to be vegetable and especially amylaceous diet. In armies it consists of dry bread or biscuit, with coffee or tea. Upon a careful and extended examination, it has been found that when the soldiers are on the march they have to live mainly on the army biscuit, from the fact that they can carry cooked meats only for a few days' rations, and can not carry usually the means for cooking on the way. The result is that a considerable portion of the time the dry biscuit constitutes their main food. This dry, amylaceous diet produces a constipated state of the bowels. The retention of these starch matters an undue time in the alimentary canal results soon in exciting fermentative changes, during which large quantities of gaseous products are generated. This fermentative condition goes on increasing from day to day till the contents of the alimentary canal become one fermenting mass of yeast, when the constipated condition gives way to the irritant cathartic influence of the developing yeast plants and constantly increasing gaseous products, and profuse discharges of fecal matters and wind result. Previous to this however, the fermentation during the constipated stage has, by its irritative influence, produced a peculiar abnormal condition in the follicles and villi of the large intestines and stomach. Simultaneous with this follicular enlargement quantities of colloid matter are developed. The intestinal canal and stomach become coated with a pultaceous, adherent, offensive matter, which excites fermentation in amylaceous food soon after it is eaten. The food taken during the day begins actively to ferment by evening, and the bowels and stomach become distended with gases, and continue so until the food of the day has been all evacuated, when the flatulence gradually disappears. This daily increasing fermentation produces daily increasing irritation, resulting in a constant increase of diarrhea which soon becomes chronic.

(To be CONTINUED.)

HOW TO PRODUCE THE SEXES AT WILL.

Professor Thury, of Geneva, has advanced a theory on the production of sex at will, stating that by coitus taking place soon after the beginning of heat in animals or in the earlier part of the menstrual month in the human female, that females are produced ; and that coitus taking place later or in the latter part of the period of heat in animals and the same of the menstrual period of the human female, that males will be produced. If this law can be definitely proven it would be of more than ordinary importance, but as yet it amounts to but little more than theory. In the *Medical and Surgical Reporter* we find the following on the subject :

“What could be more important than to be able to produce male or female children as we wished? To control as might be desirable the percentage of sexes in a population? Many a plan has been suggested, and perhaps among them some have not received the attention they merit. Some physiologists have supposed that one ovary produces males, the other females. The suggestion has been made, that did the woman, immediately after congress, lie a while on one side, she would always have one sex for offspring. We have learned from a lady who tried this in eight conceptions, that turning on the left side produced always males, on the right females.

“But a more plausible theory is that of M. Thury, professor in the Academy of Geneva. He observed that the queen bee lays female eggs at first and male eggs afterward ; that with hens the first laid eggs give females, the last male products ; that young bulls, who meet the female at first signs of heat, generate heifers more frequently than old bulls who are exhausted and do service later ; that mares shown the stallion late in their periods drop horse colts rather than fillies. He formulated, therefore, this law for stock raisers : ‘If you wish to produce females, give the male at the first signs of heat ; if you wish males, give him at the end of the heat.’

“We have before us the certificate of a Swiss stock grower, which says, speaking of the accuracy of this law : ‘In the first

place, on twenty-two successive occasions, I desired to have heifers. My cows were a Schwitz breed and my bull a pure Durham. I succeeded in these cases. Having bought a pure Durham cow, it was very important for me to have a new bull to supersede the one I had bought at great expense, without leaving to chance the production of a male. So I followed, accordingly, the prescription of Professor Thury, and the success has proved once more the truth of the law. I have obtained from my Durham bull six more bulls for field work, and, having chosen cows of the same color and hight, I obtained perfect matches of oxen. My herd amounted to forty cows of every age. In short, I have made in all twenty-nine experiments after the new method, and in every one I succeeded in the production of what I was looking for—male or female. I had not one single failure. All the experiments have been made by myself, without any other person's intervention; consequently, I do declare that I consider as real and certainly perfect the method of Prof. Thury.'

'In August, 1863, M. Thury submitted his plan to the Academy of Science at Paris. It was tried, on the recommendation of that body, on the Emperor's farms, with, it is alleged, the most unvarying success.

"A farmer in Louisiana writes thus to the *Turf, Field and Farm*, in reference to this law, as applied to men. 'I have already been able to guess with certainty the sex of a future infant. More than thirty times, among my friends, I have predicted the sex of a child before the birth, and the event proved nearly every time that I was right.'

"The idea was not new. As long ago as July, 1863, Dr. Packam, of Wimborne, wrote to the *London Lancet* that, 'In the human female conception in the first half of the time between menstrual periods produces female offspring, and male in the latter. If a woman is "out" in her reckoning, if she goes beyond the expected time, the babe generally turns out to be a boy.'

"A correspondent of the same journal further says on the same subject: 'I would state that in numerous instances that

have come under my observation, Prof. Thury's theory has proved correct.

" 'Whenever coition has taken place in from two to six days after the cessation of the menses, girls have been produced ; and whenever coition has taken place in from nine to twelve days after the cessation of the menses, boys have been produced.

" 'In every case I have ascertained, not only the date at which the mother placed conception, but also the time the menses ceased, the date of the first and subsequent sexual intercourse, for a month or more after the cessation of the menses, &c.

" 'In two instances, the mothers were positive that they carried their fœtus ten months, from the fact that their husbands did not have sexual intercourse with them but *once* from the cessation of their last menstrual period till some time after their children were born. The only time that sexual intercourse took place was, in one instance ten days, and in the other eleven days after the cessation of the menses, and the boys were born ten months from the date of coition.

" 'In another case coition first took place *fourteen* days after the cessation of the menses, and the mother was delivered of a large healthy girl ten months from that date. But in this instance coition took place several times a week, from the fourteenth day till five weeks or more after the cessation of the menses. From the mother's statement of her sensations and the general symptoms that appeared within two months of the first coition, I think that there is no doubt but that conception took place a day or two *before* the next menstrual period was due, instead of fourteen days *after* her last menstrual period.

" 'In many instances it is impossible to obtain reliable information from our patients as to the date of cessation of menses, the first or subsequent sexual intercourse, &c., even when they are willing to give us all the information they can, when they apply to us to inform them as to the probability of conception having taken place, and the probable time of delivery, as many of them take no note of such things, and when questioned, can not give definite answers or furnish us reliable data on which to base our predictions. But many, like the instances above men-

tioned, can give us *positive* information on these points, so that we can prove or disprove such a theory as that of Prof. Thury, by noting the instances that come under our observation in the course of our practice.' "

THE TREATMENT OF OBSTRUCTION OF THE BOWELS.

By DR. THOMAS HEAD, Carlisle.

In cases of obstruction resulting from the lodgment of undigested articles of food, observation has led me to regard the lower portion of the ileum or the ileo-cæcal valve as the locality of the disease, and having seen such frequent instances of disappointment in the use of enemata of the ordinary quantity, I have been led to place my chief reliance in those of large volume. For constipation limited to a loaded state of the colon, injections possessing stimulating properties will generally prove successful; but in cases similar to that described, they will most frequently be found inefficacious. A pint enema, with a few drops of laudanum, may indeed with advantage be injected, and upon it the oil in the quantity described; the oil ascends through the watery fluid and is thereby more certain to reach the seat of the disease.

On consultation with Dr. Todd, in the case of a young man who had eaten a large quantity of unripe fruit, followed with great abdominal pain and with obstinate constipation, the bowels not having been relieved by any treatment adopted, I suggested the use of an enema of three pints of warmed oil, which was reluctantly acceded to in consequence of previous small enemas being still retained, and Dr. Todd made it a condition that I should superintend its administration, to which I readily consented; the whole of the oil was slowly and carefully thrown up into the bowels; the abdomen became enormously distended and the stomach rejected every thing taken—even the smallest quantity of fluid of any kind was rejected. The oil was retained in the bowels by means of pressure over the anus by a soft napkin, continued for more than an hour. In less than three hours

part of the oil returned with slight appearances of feculent matter; but, within ten hours after the warm oil had been injected, four or five copious evacuations were passed containing enormous quantities of scybalous feces. During the operations upon the bowels anodynes and champagne were given, and some refreshing sleep ensued. This young gentleman's health remained for some time in a precarious state, but was eventually completely restored. Some weeks after this attack a thickened condition of the ileo-cæcal valve, which, however, disappeared in course of time, could be distinctly felt by a manual examination. The bowels remained rather torpid, but in other respects his health was gradually and eventually completely reinstated.

Obstruction of the Bowels.—Failure of Small Injections.—Successful Effects of Copious Injections of Oil.—Recovery.—A poor woman, a patient in the Carlisle Dispensary, married, aged 33 years, became the subject of obstruction of the bowels. The physician under whose care she came had not seen her for two days, but had ordered a small treacle and water enema to be administered with the old pipe and bladder apparatus. In consequence of his absence I was asked to see the case. All the symptoms of obstruction of the bowels in a severe form were present; the internal medicines which had been prescribed had proved unavailing and had caused much vomiting. I ordered hot fomentations with turpentine to be applied to the abdomen, and a large oleaginous enema to be administered with the syringe and O'Beirne tube; in the course of a few hours the bowels acted freely with great relief to her sufferings; the symptoms of peritonitis, the result of intestinal distention, rapidly abated and she made a speedy recovery.

The next case presents points of much professional interest.

Obstruction of the Bowels of ten days' duration.—Recovery.—A gentleman, aged 56, extensively engaged in the corn trade, who had been in the habit of biting wheat and other grain to ascertain their quality, and to swallow the particles thus introduced into his mouth, was attacked with great pain in the bowels (especially on the right side, in the situation of the ileo-cæcal valve), accompanied with vomiting; the pulse was rapid

and feeble. The treatment consisted at first of hot fomentations and turpentine to the abdomen, an enema of oil saponified with liquor potassæ and turpentine; moderate doses of calomel, opium and creosote were given at short intervals. From these remedies no relief was procured. The pain having increased in the right side of the abdomen, ten or twelve leeches were applied; no improvement in the symptoms took place; large enemata of oxgall and warm water were repeatedly administered; no satisfactory results followed. Three pints of warmed oil was now administered as an enema, and retained by firm external pressure to the anus. The sickness became most distressing, followed by severe vomiting, and a large quantity of the clear oil that had been injected into the bowels was thrown off the stomach; this took place repeatedly for the next few days, with, however, an apparent diminution of the pain and other distressing symptoms. No evacuation from the bowels took place. Pills of concentrated oxgall, with creosote, were now repeatedly given, and a free evacuation of fecal matter speedily followed, mixed with immense quantities of comminuted grain; the motions appeared devoid of bile. The stomach became less irritable and the vomiting gradually subsided. A tablespoonful of recent oxgall was given every morning with a few drops of chloric æther, and was happily retained, and the bowels by these means were brought into free daily action. The obstruction of the bowels was of ten days' duration. The patient gradually recovered his health, and, with the occasional use of artificial and natural Harrowgate water, the bowels have been restored to a much more healthy state than they have been in for a long time previously.

Obstruction of the Bowels of twenty-one days' duration.—Recovery.—It must not be supposed that all cases of intestinal obstruction are characterized with the urgent symptoms detailed in the preceding cases; on the contrary, it may be safely affirmed that in persons of advanced age the system acquires under every form of obstruction a power of endurance much greater than in younger persons suffering from the disease. The following is a good example of this condition:

A lady living in the vicinity of Edinburgh, aged 74, became

the subject of intestinal obstruction, and, notwithstanding that all the ordinary remedies were unremittingly used for a period of three weeks, no fecal evacuation was procured. At this date the late Dr. Allison saw the case, in consultation with Mr. Sanderson of Musselburgh, and, as a last resource, small and repeated doses of calomel and opium were prescribed; in three days ptyalism ensued, and on the day following free fecal evacuations took place; the bowels now became so very much relaxed as to threaten fatal exhaustion; by the use of stimulants and mild nourishment a slow recovery was made and the life of the old lady was prolonged for several years.

The practical conclusions to which these cases would lead us are—that in the intussusception of infancy inflammatory action which occurs in the middle periods of life is not excited in the serous membrane; that the straining and the evacuations of pure mucus streaked with blood are points of the highest diagnostic value. In such cases the peristaltic action of the small intestines ought to be allayed rather than excited by medicines given by the stomach; and oleaginous enemata and quicksilver are means of the most probable efficacy for restoring the displaced intestines to their healthy relations. Where obstructions depend on the presence of undigested aliment, the lodgment most frequently occurs at the commencement of the large or near the termination of the small intestines. After the lower portion of the colon has been cleaned out by the use of a strong enema of oil, saponified with a little liquor potassæ, combined with about an ounce of turpentine, without the general peristaltic functions of the bowels being restored, it becomes desirable to use large enemata of warmed oil, the lower portion of the colon having been previously filled with a small ordinary enema of warm water, to which a few drops of laudanum may be added to secure its retention. Experience has appeared to justify me in believing that this mode of treatment is calculated to accomplish relief more speedily and certainly than the kind of treatment ordinarily adopted.

In the obstruction of aged persons the tendency to inflammatory complications becomes lessened, and the treatment may, on

that account, be both of a less energetic character and be longer persevered in before either relief to the obstruction or a fatal issue occur. It may here be also noticed as a point of diagnostic value, that in obstruction of the bowels, the seat of the disease being near the small intestine, the symptoms more nearly resemble those present in strangulated hernia, while, when the larger bowels are obstructed by scybalous accumulations, there is much less irritability of the stomach, although in both great abdominal pain may be produced.—*St. Bartholomew's Hospital Reports.*

ACTION AND USE OF PHOSPHATE OF SODA IN SMALL DOSES.

By Dr. WM. STEPHENSON, Extra-Physician to the Royal Hospital for Sick Children.

This is an important salt in the animal economy, and one often sadly deficient in the food of children. It is usually described as a mild saline aperient. Its action is such, however, only when given in large doses, and in the present day it is but rarely prescribed. My reason for its use, however, is based on the experiments of Dr. Marcet, who first pointed out that the fatty acids are converted into an emulsion by its agency, and that they thus may become more easily assimilated. This is certainly a point deserving of more attention at the hands of medical men than it has received. Further than this, I have not found any special therapeutic action ascribed to it when administered in small doses. That it has such, however, it is the object of this paper to show

My attention was first drawn to it by seeing it frequently prescribed by Dr. Ritchie, who uses it according to the recommendation of Dr. Routh. The first case I gave it in was for a child, four months old, who was being artificially reared on the bottle, and although healthy in every other respect, was somewhat confined in the bowels, having but one motion each day copious, but dry and white, exactly like coarse white chalk and curdled milk. A pinch of the phosphate of soda was ordered to be added to each bottle of milk. The result was striking, for

the very next day the motions were in every way natural and healthy. I had afterwards several occasions of observing in this child the same action under similar circumstances.

The extensive field for observation afforded me at the Children's Hospital has enabled me further to investigate the matter; and in order to have as few disturbing influences as possible, the remedy was always prescribed alone, the parents being directed to put a pinch of the powder into each article of food the child received; in this way four or five grains were administered each time. The class of cases for which it was ordered were wherever, from an unhealthy character of the motions, the visceral secretions seemed to be abnormal. The first point that became apparent was, that in a great majority of cases where the color of the stools was abnormal, the natural yellow appearance was restored. This was the only appreciable result in many cases; but, at the same time, it was observed that some forms of diarrhoea at once yielded to its action. Several cases of chalky motions, similar to the one narrated, have been treated with the same beneficial results; and now, in this disorder, I have entirely discarded gray powder and rely on the phosphate alone. Thus far an action of the liver is clearly indicated, which becomes confirmed by the result in the following cases of jaundice:

Case 1.—Wm. P., a robust child, 4 years of age, was brought to the hospital suffering from jaundice. The skin and conjunctiva were of a deep yellow color. Four months before he had an attack of scarlatina, and since then he has often complained of pain in the belly, his bowels being more or less deranged, motions sometimes white, never a natural color. Six days ago he turned sick and vomited for two days; no purging; great thirst. No bilious looking matter in the vomit. On the second day of the attack his skin was observed to be yellow, his stools white, and urine highly colored, staining whatever it touched. Ordered 30 grs. phos. sod. in his food each day. The next morning his motion was slightly yellow and water much clearer. On presenting himself the following day, a marked improvement in his color was perceptible, and in a few days he had quite recovered.

Case 2.—The notes of the following case were supplied by Dr. Ramsay, my assistant, who attended the child :

On the 1st of February I was called to visit a little boy of 2 years of age, whom I found to be suffering from well pronounced jaundice. The mother believed the jaundice to have been caused by the child's "taking a draw" from his father's tobacco pipe. His skin and conjunctiva were deeply tinged with bile. The urine was of dark porter color, and the stools were pale and clay colored. He was languid and dull, but complained of no local uneasiness. I ordered him to be fed upon bread and milk for a day or two, and to have as much of the phosphate of soda as lay on a threepenny-bit night and morning. At next visit, i. e., on the following day, I found that, having lost the prescription, my patient had had none of the phosphate. He was still more deeply jaundiced than when I first saw him and the lassitude had increased. Again ordering the phosphate, I left, and did not return till the next day but one. There was a marked improvement. The skin and conjunctiva were nearly normal in appearance, the urine was of a natural color, and the stools had regained the appearance of healthy fæces. I only saw him once subsequently, when I found him in perfect health.

Jaundice in children, however, may pass away of itself; too much weight, therefore, must not be placed on such cases. The improvement in these two instances was certainly immediate upon the administration of the medicine, and may accordingly be taken into consideration along with other cases of a different character where the liver is involved.

In the children we find diarrhea associated with inaction of the liver, as indicated by the uniform white color of the motions. The following cases illustrate this condition :

Case 3.—A boy, 3 years and 4 months old, can neither walk nor speak, and was 14 months before he cut his first tooth. He has been very subject to diarrhea, but looks well and is not emaciated, although soft in the flesh.

19th January. Has had diarrhea for six weeks; motions unaccountably frequent, quite watery, pale white, never yellow, and having a strong smell. Portions of egg have been observed

to pass through the bowels; vomits occasionally; has a very poor appetite and great thirst. Ordered phosphate of soda.

24th. Bowels have been moved only three times in the twenty-four hours; discharges still watery in the morning, but stiff through the day, slightly yellow and more natural in appearance. He is taking his food better and has not so much thirst.

2d February. Bowels still rather loose in the morning, otherwise natural; he has no thirst; appetite good and he is rapidly gaining strength.

Case 4.—A girl, 18 months old; weaned at 7 months. 10th. April. Has had diarrhea for two months; six or eight motions each day for the last two weeks; they have been uniformly white in color and very watery; vomits occasionally. Ordered phosphate of soda.

12th. An hour after taking the powder the motions became yellow; they are still watery, but only twice in the day. Vomiting continues. To continue the powder and give pepsine wine after each meal.

17th. Vomiting stopped; bowels again loose and stools white. The phosphate of soda had not been stopped, but the quantity lessened. Ordered to increase the dose.

19th. Motions are again healthy in color and now of natural consistence.—*Edinburgh Medical Journal*.

BLOW-PIPE GAS CAUTERY.—This is an instrument by means of which the intense heat of the blow-pipe flame is made available as a cauterizing agent. The supply of gas is contained in an india-rubber ball filled from an ordinary gas-jet, and, as the lighted gas is forced from this, it is converted, by a current of air which impinges upon the flame, into a sharply-pointed jet, possessing sufficient heat to fuse the ordinary metals. The whole apparatus is packed in a small box, and has the advantage over the galvanic cautery both in portability and cheapness. It is made by Mr. Baker, of Holborn, from the design of the inventor, Mr. Alex. Bruce.—*Braithwaite's Retrospect*.

MEDICAL REPORTER.

ST. LOUIS, MARCH 15, 1868.

St. Louis Medical College—Commencement Exercises.—The commencement exercises of the St. Louis Medical College were held, March 2d, in the lower hall of the Polytechnic building. This institution is more familiarly known as Pope's College, located at Seventh and Myrtle streets, and was founded more than a quarter of a century ago. It has given diplomas to a multitude of physicians, and on this occasion added forty-six to the number. The graduates gathered earliest at the hall. A band with stringed instruments made excellent music, and an abundance of it, while the audience was assembling. The large hall was filled with deeply interested spectators and listeners, ladies and gentlemen, representing the educational and professional circles of the city and the host of friends of the institution.

Dr. Hodgen, Dean, presided with his wonted serenity and grace. Rev. Dr. Elliot, occupying a seat on the platform, opened the exercises with prayer. Music succeeded, and the President then announced the Students' Valedictory, by Mr. John R. Coffman. Mr. Coffman, who is from Ste. Genevieve, and is a young gentleman of pleasing personal appearance, proceeded to the platform and gracefully delivered—referring occasionally to the manuscript—an appropriate address. He addressed in succession his fellow graduates, the audience and the faculty, and closed amid cordial applause.

After a musical interlude, the diplomas were conferred. The accompanying address, by Dr. Pallen, was brief and impressive. He spoke of the responsibility of the College in conferring and and of the graduate in receiving these testimonials, and reminded the young gentlemen that they were entering upon a profession of self-denying toil, not of wealth or fame, but of virtue and philanthropy.

Subjoined are the names of the graduates :

J. B. Jones, North Carolina; C. G. Jones, Jacksonville, Ill.; S. E. Garlock, St. Louis; T. G. Horn, Junction City, Kansas; W. R. Farmer, Fredericktown, Mo.; J. W. Calfee, Linn Creek, Mo.; Wm. Carson, Jr., Palmyra, Mo.; Thomas R. Thornton, Westport, Mo.; Samuel Pettigrew, St. Louis; S. H. Hayman, Monticello, Mo.; H. B. Harriass, Cambridge, Mo.; T. Wilson Shaw, Macon, Mo.; J. L. Gregory, St. Louis; Henry Kirchner, St. Louis; David William Reid, Cambridge, Mo.; James P. Jackson, Labadie, Mo.; Marcus M. Rhoades, New Frankfort, Mo.; M. Reynolds, Bowling Green, Mo.; F. G. Brown, Beech Fork, Ky.; R. J. O'Reilly, St. Louis; Edward C. Hays, New London, Mo.; James M. Briscoe, Louisiana, Mo.; J. R. Coffman, Ste. Genevieve, Mo.; W. C. Talley, Green, Mo.; C. D. Crawford, Pocahontas, Mo.; Thomas Fox, Carthage, Ill.; J. H. Traylor, Cape Girardeau, Mo.; Washington West, Belleville, Ill.; T. Beecher Moore, Belleville, Ill.; M. G. Parsons, Chester, Ill.; Julius H. Tyndale, Springfield, Ill.; N. Bruce Carson, St. Louis; Noah F. Baker, Fulton, Mo.; Horeph Johnson, Collinsville, Ill.; Alvin J. Herndon, Weston, Mo.; Ed. Mayer, Duquoin, Ill.; H. G. McEwen, Mo.; W. F. Sheek, Mo.; W. R. Samples, Mo.; Samuel T. East, Mo.; Ewald Frelingsdorf, Mo.; J. T. Gordon, Ills.; E. R. Harris, Mo.; E. O. Lemen, Mo.; J. J. Moore, Mo.; Cornelius Watson, Canada West.

AD EUNDEM DEGREES

Were conferred upon Dr. James F. Bruner, Mo.; Dr. O. F. Renick, Mo.; Dr. Matthew W. Hall, Mo.; Dr. James N. Coons, Mo.; Dr. J. P. H. Gray, Mo.; Dr. E. E. Waggoner, Ill.

The valedictory to the students, in behalf of the faculty, was delivered by Professor E. H. Gregory, and was replete with excellent practical suggestions and sound advice. It was listened to with profound attention, and, doubtless, its words of wisdom will long be remembered by the young gentlemen to whom it was addressed.

The St. Louis College of Pharmacy.—The winter session has closed; the class has been large enough to give energy to the patrons to continue their efforts toward establishing a permanent and flourishing institution. Thus far the students have received such instruction as has given satisfaction to their employers, and we doubt not, that very shortly such an influence will be exerted on the whole body of druggists as shall redound to their character and place Pharmacy on a very different footing from what it in former years held. To be an apothecary in St. Louis will require, we hope, a membership of its College or of some other. The time is passing away when any one can start a drug store with little else than a few dollars; the time is coming rapidly when the dispenser of medicines must have received an education in pharmacy. We owe it to ourselves that this should be so, and we see in our College of Pharmacy the means to attain that end.

The Missouri Dental College.—The second annual commencement of this College was held on the 26th of February, at O'Fallon Hall.

A respectable audience, composed of the numerous friends of the institution, filled the hall. Messrs. John R. Matthews, Alfred C. Sloan and William L. Thomas received the degree of Doctor of Dental Surgery. A very excellent parting address to his fellow-students was given by Mr. John R. Matthews. The valedictory was delivered by Prof. H. E. Peebles. It was full of earnest advice to the students, and gave encouragement to the friends of the College as to its future. Thus far the College has done well; the class for the next winter promises to be large.

Dr. Brown-Séquard.—At a recent meeting of the Académie Médecine, Dr. Brown-Séquard was elected a foreign corresponding member.

Obituaries.—We see announced in our foreign exchanges the death of Sir David Brewster, who died in England, February 10, 1868, at the age of 87 years. He was born in Scotland. He was justly classed as one of the great men of the day, and the scientific world has lost one of its brightest lights. He was knighted by William IV, in 1831, and was a member of most of the scientific societies of Europe.

We also notice the death of Dr. John Davy, younger brother of Sir Humphry Davy, aged 78 years. Dr. Davy stood high as a medical and scientific enquirer, and was one of the first to use the thermometer in diagnosing disease, as well as one of the most minute and correct observers in chemical researches and natural history. He was a member of most of the European scientific societies.

Professor F. Verdugo died at the age of one hundred and five years, at Albeira, province of Salamanca, Spain. He practiced medicine for eighty years.

Carbolic Acid and Iodine.—We see by our exchanges that it is recommended to use a combination of above substances, combined for external application in place of pure Iodine, as it obviates the stain to the skin and clothes. Dr. Percy Boulton's method consists in adding a few drops of carbolic acid to the Iodine solution to be employed, which renders the Iodine colorless, so that it may be applied with impunity. It appears that the Carbolate of Iodine, which is the substance thus formed, is not only one of the most powerful antiseptics we possess, but is even more efficacious than the pure Iodine. It may be used in all the forms of injections, gargles, lotions, &c., in all cases where Iodine is usually prescribed. In sore throat, ozena, diphtheria, abscess in the ear, sores, &c., this preparation is a sovereign remedy, for, while it possesses disinfecting qualities in a great degree, it also modifies the mucous membrane and causes all local sensibility

to disappear. The formula usually employed is as follows : Compound tincture of iodine, 3 grms.; pure liquid carbolic acid, 6 drops; glycerine, 30 grms.; distilled water, 150 grms.

Mongrel Association.—Misery, it is said, makes strange bed-fellows. This has been strikingly illustrated lately in Philadelphia, where a meeting was held, it is stated, of "Allopathics, Homœopathics and Eclectics," who, having amicably agreed to discard sectional names and adopt that simply of physicians and surgeons, formed themselves into an association, which, with characteristic modesty, they have styled "The National Medical Association of the United States of America."—*New York Medical Journal*.

Sir William Ferguson lately made quite a formidable operation, namely, the removal, by means of an osteo-sarcomatous tumor, of the whole scapula, half of the clavicle, and the entire arm. The patient died upon the third day. In January, 1865, Sir William removed a piece of the scapula from a young girl, and, the disease recurring, in November following, the remainder of the scapula, part of the clavicle, and the arm. This patient did well, and was exhibited on the day of the first mentioned operation, October 19, 1867.

Use of Chloroform.—Prof. E. Andrews writes from London, that out of 83,059 cases of use of chloroform in fourteen London hospitals, twenty-four proved fatal.

Dr. H. R. Storer has resigned the Chair of Obstetrics at Berkshire Medical College, in consequence of its interfering with his practice in Boston.

T H E

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DEFECTIVE ALIMENTATION A PRIMARY CAUSE OF DISEASE.

By J. H. SALSBURY, M. D., Cleveland, Ohio.

[Commentated for the St. Louis Medical Reporter.]

Continued from page 58.

It has been noticed that in warm, malarious regions the men are more liable to this disease, from which fact it has become quite a general belief that it is a miasmatic malady. In all malarious regions there is a much greater tendency to the development of low cryptogamic forms, and fermentation is sooner excited and progresses more energetically than in non-malarious localities. This increased tendency in malarious districts to the development of yeast and other cryptogamic plants, and, consequently, to the development of fermentative changes, will, undoubtedly, explain the reason why, in such places, there is an increased liability to this disease. In such localities the gelatinous (colloid) products of the feces are peculiarly marked and seem to aggravate the diarrhea. The intestines appear to be in a condition to afford a proper nidus for the development of this peculiar matter. It does not, however, appear to have anything to do as an exciting cause of the disease—it being merely a consequence of peculiar saccharine and fermentative conditions of the system. As soon as these are corrected, colloid matter ceases to develop.

It will always be noticed that the men are much more liable to attacks of diarrhea during and immediately subsequent to long marches, and after having lived for some time on a dry, amylaceous diet that has produced more or less constipation, than they are when situated so as to cook and feed upon a plenty of good meat and vegetables.

This form of diarrhea is always preceded and accompanied by active fermentative changes in the alimentary canal, developing large quantities of gaseous products, attended with eructations, which are generally more or less sour. The disease is very liable to run into a chronic form if not taken hold of early. In the early stages of the complaint, a simple change of diet from farinaceous to albuminous is sufficient frequently to cure the disease in a few days. If this cannot be done, a simple cathartic dose of Rochelle salts to clean out the alimentary ferment, followed by small, highly dilute doses of the vegetable acid salts of potassa and iron, will check the disease in the majority of cases.

That the amylaceous food is the principal cause of chronic diarrhea, is further evidenced by the fact that the officers, who live on more of an albuminous and vegetable diet than the men and have facilities for carrying and cooking a variety of food, are exempt from the disease, except when they subject themselves to the amylaceous diet of the men.

The active fermentation and development of yeast plants and the resultant gaseous products in the alimentary canal, act as an irritant poison and cathartic of a peculiar character. This is evidenced from the colloid condition which it produces in the stomach and large intestines. They also produce paralytic symptoms in the bowels, extremities, head, and, in fact, over the whole body—manifested in the involuntary discharges, the numb and prickling sensation in limbs, the confused numb feeling in head, ringing in ears, &c.* They also produce bronchial and

* Carbonic acid, when introduced into the system gradually, (in abnormal quantities) by inhalation, has a tendency to produce ringing in ears, confused numb sensations in head, and more or less paralysis of nerves of sensation and motion.

pulmonary irritation, with a remarkable tendency to tuberculosis, thrombosis and embolism.

In the army there is in all the men a peculiar chronic condition of the alimentary membranes, excited by frequent fermentation of amylaceous matters retained too long, and which condition does not run on to chronic diarrhea unless some enervating cause, such as over-fatigue, dysentery, typhoid, bilious, remittent, or intermittent fever or other cause, debilitates the system and further impairs the condition of the alimentary membranes. This is evidenced by the almost universal condition of the alimentary canal of apparently well soldiers who are shot dead in battle.—(*See Eng. Surg. and Med. Hist. of Crimean War.*) The follicles of the large intestines are more or less enlarged, and frequently disintegrated, leaving ulcers.

The amylaceous army biscuit diet of the common soldiers, beyond its fermentative and carbonic acid poisoning effects, does not furnish to the system the proper proportion of ingredients for healthy alimentation and nutrition; and hence results a scorbutic condition which renders the disease obstinate to treat, unless this state is recognized and particularly attended to. This explains the reasons why the vegetable acids, combined with potassa and iron, are so useful in this disease. Rochelle salts are admirably adapted for exciting intestinal epithelial activity and secretion, and absorption in the alimentary walls.

Any one kind of food too long continued has a tendency to produce derangements in the system of a scorbutic type. Amylaceous matters, too exclusively used, tend to excite abnormal actions in the parent epithelial cells of the mucous surfaces and of the glands; while any one kind of animal food, too long and exclusively eaten, produces derangements that show themselves more strongly in the skin and mouth. A too free use of oils, and fatty food, and alcoholic beverages, produces the red blotched face and swelled carbunculated nose, oily surface, and erythematous swelling and redness of the skin generally.

Salt meats produce a dry, scaly eruption upon the surface.

with spongy, swollen and discolored gums, loosened teeth, and a watery, flabby, often bloody tongue; with pains in the limbs and back resembling those of chronic rheumatism; leaden-hued features; offensive breath; patches of extravasated blood in various parts of the body; hard, contracted condition of the muscles; stiffness of the joints; diarrhea and hemorrhage from mucous surfaces generally; mental depression and indisposition to any kind of exertion.

From this scorbutic condition, produced in all the men by the want of the necessary variety in their food, arises a long train of the most fatal and obstinate diseases of the army. Among these may be mentioned chronic diarrhea, the so-called muscular rheumatism, dysentery, hospital gangrene in wounds, tuberculosis, fibrinous depositions in heart, the clogging up of the pulmonary vessels with fibrinous clots, paralytic conditions and tendencies, and many of the diseases of the larynx, eye and ear. This condition of the system also renders it extremely subject, when exposed to the exciting cause, to typhoid, and intermittent and remittent fevers. The vital powers are so depressed, the organism, on slight exposure to cold, is liable to be frostbitten, and strongly inclined to attacks of pneumonia and bronchitis, with diseases of the eye and ear. In short, the long list of army diseases may, in a great measure, be traced to an extreme susceptibility to them; which susceptibility is produced by a want of a proper admixture of nutrient ingredients in the food of the soldier in campaigns. All agree that scorbutic states arise from this cause, and none of any experience in army diseases can fail to trace almost everywhere among them some symptoms of scorbutus. If it is not plainly visible in the man who appears well, it will make itself manifest in him as soon as he is placed under treatment for any disease, in the remarkable benefit his system derives from the vegetable acid salts of potassa and iron, and the free use of those articles of food his system has been deprived of. Without this treatment almost all diseases in the army become obstinate to treat, much more so than similar ones in private practice.

In old cases of chronic diarrhea, it frequently happens that the diarrhea somewhat abates, the appetite becomes remarkably good and the patient fattens rapidly. His abdomen becomes distended and hard, it being either dropsical, tympanitic or distended by enlarged viscera, and the whole surface becomes bloated and presenting the appearance of having been produced by an excessive and too exclusive use of alcoholic beverages. The eyes become prominent, red and watery; the thyroid glands become enlarged; the heart gives marked evidence of fibrinous depositions internally;* the breathing is oppressed, and there is more or less of a paralytic tendency.

Summer Complaint in Children.—The summer diarrheas in children are of the same character as the so-called chronic diarrhea previously described. It is essentially a disease of defective feeding and readily yields to the simplest treatment by removing the cause and substituting food that will not ferment with yeast. As soon as green vegetables and fruits appear in early summer, children begin to live almost entirely upon this kind of food at expense of more substantial material. The same symptoms and pathological lesions in the same order result as have been previously described under the head of chronic diarrhea, and the disease yields readily to the same treatment.

Remarkable Similarity between the Chronic Diarrhea of Armies and the Disease in Swine known as Hog Cholera.—Several years ago, at the suggestion of gentlemen largely engaged in fattening swine, I entered upon a careful and lengthy series of investigations connected with the causes, pathology, prevention and treatment of the fatal and wide-spread disease in animals known as "Hog Cholera." This disease has been for several years so extended and fatal in districts where large lots of hogs were being fattened, that uniformly from twenty to eighty per cent.

* It has been noticed that in certain cases of heart disease the thyroid glands become enlarged and the eyes prominent, watery and red. Whether there is any analogy between the condition of the system in this form of heart disease and that producing heart disease, chronic diarrhea, paralytic tendencies, &c., in the army, I am unable to say. I merely mention the circumstance here to lead attention in this direction.

74 *Defective Alimentation a Primary Cause of Disease.*

of them would die. The average loss was from thirty to forty per cent. It even attacks, in certain localities, hogs, and sometimes cattle, that are fed largely and exclusively upon good, sound corn. I have made over one hundred careful post mortem examinations in this disease, and have studied the symptoms in detail before death, and have conducted extended experiments, on a large scale, connected with prophylactic and remedial means, and am perfectly convinced that hog cholera is the same disease in animals as that which is known in the human subject in armies as the chronic diarrhea.

The same colored passages and kind of diarrhea, preceded by constipation, with a tendency to fibrinous depositions in the heart (thrombosis), to the clogging up of the pulmonary capillaries with embolia, to tubercular depositions and paralysis, occur in hogs when they are fed too exclusively on the acid and fermenting slops of whisky distilleries, or on mouldy, sour, or fermenting corn, or even sometimes on good, sound corn, as we find in the chronic diarrhea of armies. Both diseases are the result of feeding too exclusively upon amylaceous food, or the products of its fermentation.

In hogs the disease begins from the third to the eighth week after they are put exclusively upon this kind of food. If they pass the eighth week without an attack, they begin to thrive and improve rapidly. During the disease the feces are of a pale ash color and filled with more or less colloid matter and a multitude of torrula cells. The follicles in the stomach and large intestines, and especially in the latter, are more or less enlarged and protrude as in chronic diarrhea.

There is a remarkable tendency to fibrinous depositions in the heart, to tubercular deposits in the lungs, and to the accumulation of embolia in the pulmonary capillaries, resulting in a damming up of the blood, hepatization and death. Before death the heart always beats spasmodically, which is indicative of fibrinous depositions in its cavities and of the damming up of the blood in the lungs by the accumulation of emboli in the pul-

monary capillaries, and of an early fatal result. The body becomes more or less paralyzed—especially is this the case with all the posterior parts of the body and hind legs.

There is evidence of ringing in the ears, from the fact that the animal carries his head tipped to one side and every few minutes shakes his head. The eyes become affected so that there is always, in the later stage of the disease, more or less blindness. The appetite is always good till the spasmodic or trip-hammer pulsation of the heart begins.

The post-mortems reveal the same conditions and lesions that are found in chronic diarrhea.

The tendency to this disease varies with the state of the system, the meteorological conditions and malarious tendency or disposition to the development of low cryptogamic forms; that is—other things being equal—it is more prevalent during those seasons, and periods of the season, when cryptogamic vegetation is the most active and there is the greatest tendency to fermentative changes.

Those animals that survive and pass the critical period—from the third to the eighth week after full feeding begins—without having the disease, although they thrive and take on fat rapidly, yet their systems are enfeebled and they present many evident symptoms of being in a diseased condition. The skin becomes red and erythematous over the whole body; the hair partially falls; scrofulous sores and swellings frequently appear; they have more or less cough, with paralytic tendencies in the posterior part of the body; their limbs and muscular system become feeble; and any, even very moderate, driving or exercise is apt to produce pulmonary congestions and trip-hammer pulsations of heart which are followed by sudden death. On post mortem, the lungs are found hepatized, and the pulmonary capillaries filled with emboli, and the heart with ropes and masses of fibrin, and in the same condition, so far as the lungs and heart are concerned, as when the animals die of hog cholera.

The products of the fermentation of amylaceous matters—such as sugar, alcoholic beverages, carbonic acid and vinegar—when too excessively and exclusively used, have a tendency to produce derangements similar to those which result from the too exclusive use of starchy food.

These investigations throw valuable light upon the summer bowel complaints of children, especially those where the stools are gelatinous and green, and contain colloid matter. There is no doubt but that all these abnormal states arise from the too exclusive use of fruits, and starchy and saccharine substances, which children are largely indulged in.

Tuberculosis.—There is strong evidence for believing that tubercular diseases are principally the result of defective alimentation. As the observations and experiments connected with this part of the subject are extended and accompanied by illustrations, they have been reserved for a separate paper, which is now nearly ready for the press.

Excessive Use of Vinegar tends to Tubercular Disease.—The same kind of constipation, flatulence, diarrhea, cough, and disposition to tuberculosis and fibrinous depositions in the pulmonary capillaries and heart, occur in cases where vinegar is drunk daily to reduce obesity, or for satisfying a morbid appetite. Every observing physician has noticed the tendency vinegar has, when taken largely and daily repeated, to produce irritation of the intestinal and pulmonary membranes, with diarrhea and cough. Several cases of the kind are published in foreign journals. The following is one in point, taken from the second volume of the *London Medical Gazette*, 1838-'39:

"A few years since a young lady, in easy circumstances, enjoying good health, was very plump, had a good appetite, and a complexion blooming with roses and lilies. She began to look upon her plumpness with suspicion, her mother being very fat and she afraid of becoming like her. Accordingly she consulted a woman, who advised her to drink a small glass of vinegar daily; the counsel was followed and the plumpness soon dimin-

ished. She was delighted with the success of the remedy and continued it for more than a month. She began to have a cough, but it was at first dry and regarded as a cold that would subside. But from being dry it was presently moist. A slow fever came on, with difficult breathing; her body became lame and wasted away; night sweats, with swelling of the feet, succeeded, and a diarrhea terminated her life. On examination, all the lobes of the lungs were found filled with tubercles and somewhat resembled a bunch of grapes."

Diabetes usually a Disease of Defective Alimentation.—Remarkable Resemblance between the Symptoms and Intercurrent Abnormal Conditions of Chronic Diarrhea and those of Diabetes.—There is a remarkable similarity between the complications and many of the symptoms and tendencies of chronic diarrhea and those of diabetes. In both there is a highly saccharine or glycogenic condition of the system, and a peculiar abnormal tendency to fermentative changes. In both there is a remarkable tendency to heart disease (thrombosis of Virchow) and tuberculosis, with paralytic tendencies and diseases of the eye and ear. In the one disease there is a highly saccharine condition of the feces and alimentary secretions, and in the other of the urine. In the former, the liquids of the body are flowing off through the bowels, and in the latter through the urinary organs. Torrus cells are developed largely in the increased excretions of each disease. In chronic diarrhea the urine is scanty, and in diabetes the bowels are constipated. In both diseases there are marked dyspeptic symptoms with sour eructations; mouth and fauces either dry or watery; tongue clean and red; marked thirst and appetite, and a constantly increasing emaciation, with inability to maintain the temperature of the body up to the normal standard, from which inability result creeping, chilly sensations. I have reserved the further consideration of this disease for a separate paper.

Resemblance between the Colloid Matter developed in the Stomach and Intestines of Chronic Diarrhea and that formed in Bronchocele.—Colloid Disease arises from Defective Alimentation.—In the

valleys of Switzerland, where goitre is so common, the inhabitants live almost entirely upon vegetable food. This has been observed and particularly remarked by travelers and those who are familiar with the people of these Alpine valleys. This is interesting in this connection, since the colloid matter deposited in the *thyroid glands*, producing goitre, is closely analogous to or identical with the colloid matter developed in the alimentary canal of chronic diarrhea. It has been determined by these investigations that amylaceous food, its fermentation in the alimentary canal and the consequent development of sugar, carbonic acid, yeast plants, &c., rendering the system highly glyco-genic and fermentative, are the true causes of those abnormal conditions of the system in chronic diarrhea which induce the development of colloid matter; and it is extremely probable that the colloid matter of bronchocele may have a similar cause or origin. The fact that the people of these goitrous valleys of Switzerland live mainly upon vegetable food, is strong evidence in favor of this opinion. The same kind of colloid development occurs in certain conditions of the system, in the female breast and in the male testis.

Bronchocele prevails in the Alpine valleys of Switzerland to a greater extent than at any other known point. It is also quite prevalent in certain portions of England, as in Derbyshire and Nottingham, from which fact the disease is known in these localities as "Derbyshire Neck."

The disease occurs to a most remarkable extent in the deep, warm, damp, malarious valleys of the Rhine in Switzerland. It also occurs in some deep, warm, damp valleys of France, Spain, Germany, Austria, England and South America. Wherever it is very common among the people, the hygrometric and other meteorological conditions are such as to particularly favor the development of low cryptogamic forms, fermentative changes are active, and the people are eminently vegetable eaters, drinking often much sour wine. This disease is colloid in character.

Where a people live habitually too exclusively upon amylaceous and vegetable food from infancy, especially in damp, low,

malarious valleys, there seems to be a marked tendency to the development of goitre. There is, also, a disposition to colloid development in the testes and mammary glands, in the alimentary canal, and the lining membrane of the urinary and genital organs, and to flatulence, sour eructations and indigestion. They are subject to diarrhea, palpitation of the heart, and to fibrinous depositions in the pulmonary capillaries, and congestions in the lungs, brains and intestinal walls. They are also liable to impairment of voice, hearing and vision, and often the lower extremities give more or less indications of paralytic tendencies.

Where the goitrous tendency is extreme, a liability for it to run into that extreme idiotic, pitiable form of the disease—denominated Cretinism—is present. Goitre may make its appearance at any period of life, though more commonly the thyroid glands begin to enlarge in early years.*

In Cretinism the disease is congenital, the children being born idiotic and with thyroid tumors, more or less large, and which often become immense as they advance in years. Such persons are diminutive in size, pale, anæmic, and have a particular affection for the sun, which they gaze at for hours with a vacant stare. They may really be said to be sun worshipers by intuition.

Cretinism.—This never occurs except where goitre is very prevalent. It is the extreme state of congenital colloid disease. It extends frequently to the mammae, testes, lining membrane of the alimentary canal, and to that of the urinary and genital organs. The stature is seldom above 4½ feet and often less, the cranium is deformed and has a conical shape, the forehead thrown backwards, narrow and flat, and the occiput in a line with the neck. Flesh soft and flaccid; skin wrinkled, yellow, pale and cadaverous, dirty and covered with chronic

* These investigations appear to throw valuable light upon a great variety of sarcomatous abnormal developments, and especially that type known as gelatinous sarcoma and other colloid forms of disease. These appear to be expressions of certain systemic conditions which are abnormal, and must be corrected and the causes removed before such diseased developments can be successfully checked.

eruptions; the tongue is thick, watery and hanging out of mouth, which is open, large and slavering. Lower jaw long and prominent; eyelids thick; eyes red, small, but prominent, watery and frequently squinting. The belly is large, prominent and flatulent; the senses are more or less defective, or altogether abolished; the Cretins being often deaf and dumb, and those who possess the faculty of speech speak imperfectly and with difficulty. Cretins are voracious and addicted to masturbation. They often pass the feces involuntarily. The mammae are voluminous and pendent and the testes large, the scrotum extending frequently to the knees. The eyes are small, the pupils contracted and not very sensitive to light. The look is a fixed stare without expression. The external sac is large and stands out from the head, and the hearing is very defective. The elongated form of the lower jaw of the Cretins, and their thick and padded lips, make them resemble ruminating animals more nearly than man. The thyroid gland is always more or less enlarged, and often enormously so. The other glands above named are also enlarged. The *abdomen is usually distended with gases* and largely developed towards the chest, and the flesh of the extremities is flabby. The genital organs are largely developed, the menses deranged, and the power of procreation defective. They seldom live beyond the age of thirty and often die much younger. They are usually of the lymphatic temperament, with light hair and grey eyes. They are sun gazers, often looking steadily for hours together at it, as if it imparted to them inexpressible pleasures.

The following interesting letter, relating to the diet and habits of the people who live in the goitrous valleys of Switzerland, France, &c., is from Prof. Lesquereux, our justly famed fossil botanist. He is at home among the Alps, and is perfectly familiar with all the habits and customs of this interesting people. His statements, therefore, are particularly valuable in this relation, as they, taken in connection with the observations and experiments here given, render it highly probable, if not certain, that the goitrous diathesis originates entirely from the vegetable

dist of the people, aided by these meteorological conditions which favor the development of low cryptogamic forms :

COLUMBUS, O., January 9, 1864.

Dr. J. H. Salisbury :

MY DEAR SIR: I am sorry that I am not able to answer all your inquiries concerning the symptoms generally accompanying the appearance and development of the goitre. I studied this peculiar sickness rather as a naturalist than a doctor would do it ; rather trying to analyze the peculiar causes of its appearance than to analyze the various modifications to which different parts of the body are subjected. You want to know :

1. In what part of the country of Switzerland the goitre is mostly prevalent ?
2. What are the habits of the people mostly attacked by it ?
3. To what cause is the sickness generally attributed ?

1st. The goitre is mostly prevalent along the rivers and at the bottom of some deep valleys of the Alpine mountains. I have observed it especially in the *Canton Valais*, along the valley of the Rhone, from *Lion* to *St. Maurice*. I have seen it also on the *Jura* mountains, near *Montbailard*, in *Franche-Comte*, and also in some parts of *Savoy*, especially in the valley d'*Aosta*. The goitre does not attack the inhabitants of the mountains or of the high valleys of Switzerland. The valley of the Rhone presents a peculiar appearance. It is so deeply encased in high chains of mountains, that in winter the sun does not reach the bottom in some parts, near *St. Maurice*, for example ; and that in summer the reflection of the sun by the surrounding walls of rocks caused the heat to be excessive. In winter time, and also in the fall, the valley is generally and constantly covered with a deep fog. Even in summer time, as soon as the sun is down, the fog covers some part of the valley for the night. The inhabitants of the *Canton Valais*, or *Valets*, who live in high villages or on the slopes of the mountains somewhat above the Rhone, are not subject to the goitre, as I said above. These generally

have a splendid development of the body and the most healthy appearance. It may be remarked, also, that along the valley of the Rhone the goitre is mostly predominant among the inhabitants belonging to the Catholic faith. Thus, from St. Maurice downwards the left side is Valaisian and Catholic, and there the goitre is very predominant. The right side belongs to the State of Vaud and is Protestant. There are still some cases of goitre deformation, but no Cretinism whatever. The Cretinism appears to be the extreme point of development of the goitre. It is a kind of bodily deformity, accompanied with idiotism, presenting the most disgusting appearance. The Cretins are born idiots—generally from individuals either Cretina or affected with the goitre, in its utmost development. They all bear a goitre of an enormous size, sometimes descending on their stomach. They are of a short size, not more than four feet high; have a wrinkled, yellowish pale, cadaverous skin, generally covered with a coat of filth; some are blind, or deaf and dumb; some have the itch, or other ulcerous affections. Their eyes are red, protuberant and far between; their mouths generally open and outrunning with saliva; most of the time the tongue is pending; the visage flat and blue, the front very narrow and backward. They live in filth, are voracious, lazy and lascivious. They intermarry, and generally live on the charity of the people.

2d. The inhabitants of the Valley of the Rhone are poor. Their only industry consists of the cultivation of vineyards and of small farms. They are all of the Catholic faith, lazy and dirty. The poor ones mostly live on a kind of very black bread, made with the flour and bran of oats. They eat very little meat, if any, drink water and some of their acid wine, but no alcoholic liquors. Higher up in the mountains, and on their slopes, the inhabitants are richer, with their fine pastures and large herds of cows. Their industry of cheese making is remunerative. These live especially upon milk in its various decompositions and preparations, and have no goitre. They are the most beautiful, kind and good people that it is possible

to find. In the Swiss Jura Mountains the poor of the inhabitants live mostly on *goats' milk*; but, though they are not very clean, they have no trace of *goitre*, even in the deepest valleys.

3d. The essential causes of the formation of *goitre* (of course I speak of causes appreciable to common observation) is the dampness of the atmosphere. This cause is not simple; it is confined with the filth in which the poor inhabitants of Valesia are generally living, and their poor and bad food. The sickness was at first attributed to water; but, as the inhabitants of the mountains drink the same kind of water as those in the valleys, and have no *goitre*, it is obvious that water has nothing to do with the development of the *goitre*. A damp atmosphere *can also not be considered as the sole cause of the sickness*; for, on the right side of the Rhone, below St. Maurice, the inhabitants, who are thrifty, rich and clean*—a Protestant population—have scarcely any *goitre*, and no Cretins whatever. In Franche-Comte, near Montbeillard, on the contrary, the locality where I have also seen the *goitre*, ~~is~~ *is not a deep valley*, and then the dampness of the atmosphere can not be considered as the essential cause. But here the inhabitants are proverbially filthy, lazy and poor, of course. The women cultivate some patches of corn—corn meal, prepared in a kind of porridge, being their essential, and sometimes their only, food. This part belongs to France.

The Swiss Government has done much, not only to promote researches concerning the cause of the *goitre* and the Cretinism, but also to find the means of curing the poor idiots of Valesia. A kind of hospital has been established under the management of a celebrated doctor in a high, open valley of the Alps. There good food, exercise, cleanliness and education

* Prof. Lesquereux tells me that this Protestant people use more of a meat diet than the poorer class on the opposite side of the river, the food of which is almost entirely vegetable.

have done much, if not to extirpate the plague, at least to alleviate and diminish its influence.

The inhabitants of Valesia, and of the countries where the goitre is prevalent, do not appear to lose anything of their strength, health and external appearance by the mere development of the goitre. I have seen most beautiful women and men, of the finest and most healthy growth, attacked by it. Even in some valleys of the Pyrenees and of the Alps, where the goitre is general, the inhabitants who are not attacked by it are looked at and pitied as a kind of cripples, or of deformed beings, because they do not bear under their chins this appendage—probably considered as some pleasant apparel.

I could write you much more on the subject; but I think that this letter is long enough. Should you want an answer to some other questions, I shall be always glad to tell you what I know on the matter.

Very sincerely yours,

LEO. LESQUERREUX.

(To BE CONTINUED.)

COLICA PICTORUM: ALCOHOL ITS EXCITING CAUSE—
THE ABUSE OF LEAD.

By AMOS SAWYER, M. D., Hillsboro, Ill.

[Communicated for the St. Louis Medical Reporter.]

My attention was directed to this subject some years ago by the following circumstance: During the year 1851 an acquaintance, residing at Brookline, Mass., while mixing a glass of brandy, was surprised, upon adding water, to see the mixture assume a dark color. Attributing it to the liquor, he opened a new bottle, filled a clear glass, but with a like result. I would here state that the whole family had been quite unwell for some time — apparently nervous prostration; one member had a paralytic stroke; another, slight amaurosis; a third, hysteria; while all gave evidence that some mysterious agent was slowly but surely undermining their health. He, therefore, sent a sample to his family physician (Dr. Ware), with the request to have it analyzed. It proved to be caused by *lead* contained in the water, it having been conducted through lead-pipes.

As usual, the members of this family had free access to the wine-cellar, and with the second meal wine was always served. One young lady, however, seldom drank liquor of any kind, and, although *all* the others suffered more or less from colic, she was an exception to the rule, never having been troubled in that way.

This excited my curiosity, and I determined to investigate the subject. With this object in view, I have made it a practice to inquire of every painter I may meet, Have you ever known a *strictly* temperate man to suffer from lead colic? In *every* case the answer (after some deliberation, for the question seemed to take them by surprise,) was, "I have not." In but *one* instance did I receive a *prompt* reply. In this case the gentleman—who owned a large shop in Boston—had, when an apprentice, some twenty years ago, observed that only those who indulged in *intoxicating* beverages suffered with colic; he had never drunk anything stronger than water, and so far had escaped. So fully convinced was he that it was owing to his total abstinence that he considered it his duty to warn his workmen to be temperate

if they would escape. "There is no such thing as *lead*, but there is *rum colic*."

It was only last week I conversed with a very intelligent painter, recently from England. He could not recall a single instance where colic occurred in a temperate man. He says cases are far more numerous among the workmen in England than here; and suggests that it may be attributed to intoxicating beverages, but particularly *gin*, which they think acts as a preventive.

It may be urged that *colica pictorum* is of rare occurrence. I admit cases seldom come under a physician's care; because they, in most cases, cease work when they feel the premonitory symptoms and treat the disease themselves.

In order not to be misunderstood, I will state my views succinctly. Although a strictly temperate man is equally susceptible to lead poison, only he who indulges in intoxicating beverages is in danger of or succumbs to lead colic.

That a large portion of the inhabitants of the United States are suffering from the poisonous effects of, and that the fearful increase of neuralgia, paralysis, and a host of other nervous disorders, are consequent on, the *abuse* of lead, I consider unquestionable. This may seem to be a bold assertion; but when we remember that lead in some form is introduced into *every* family—as pipes for pumps; painted roofs, the water from which, nine times out of ten, is conducted through *painted* spouts to the cistern for family use; water pails *painted inside*, and in universal use; old tinware, the holes in which are usually soldered with this metal by some member of the family; not to mention the different preparations of lead used as the base of all *so-called cosmetics*, and so on to the end of the list—I think there are few who will deny that its effect upon the general health can be otherwise but injurious.

Nor is this all. The people, as a class, are entirely ignorant of the poisonous effects of this metal. In illustration, I will cite a few instances that have from time to time come under my observation.

CASE I.—Here I found the gentleman at work repairing his

pump, the lead pipe having "worn away next the iron and sprung a leak." He stated that the pipe was originally $\frac{1}{4}$ of an inch thick, had been in the well for about two years, and now it had worn away for about 18 inches from the iron till it was as thin as paper. He could not account for it, as the man who sold him the pump told him that where lead and iron was in contact the acid would not affect it; and yet he was in the act of splicing on a pipe of the same metal. I explained to him its poisonous nature, and that, although his pipe was, by being in contact with iron, protected from the action of acids, he must remember the water contained an alkali (lime), and this would cause it to be saturated with lead, and his daily dose would be far from homeopathic. He procured an iron pipe. In this case the man who sold that pump was, in every sense of the word, a criminal, for, by his very explanation, it is evident he was well acquainted with the chemical action; but because the *poison* acts somewhat more slowly than *arsenic* he escapes his just due—*State Prison*. The family, comprising seven members, were all subject to neuralgia; one case each paralysis and amaurosis.

CASE II.—In this instance I detected the "*blue line*" on the gums of the father of the family; and, although aware it was not considered a *characteristic* sign, yet I felt warranted in announcing he was poisoned, and that *lead* was the agent. Further inquiry proved they used cistern water exclusively, and it was raised by a pump containing a *lead* pipe. He had not felt any ill effects from it, and the only evidence that my diagnosis was correct was the "*blue line*" and a slight weakness in the muscles of the legs. The wife suffered greatly with neuralgia, and the saturnine icterus was plainly visible. The three children seemed to be quite healthy.

CASE III.—*Colic*: caused by eating pigs' feet that had been pickled in a new bucket. Upon examination, found the *vinegar* had dissolved the paint; some sulphate of baryta had settled on the bottom.

CASE IV.—*Colic*: caused by eating poorly-preserved cherries that had remained for some time in a painted vessel. The smell of paint was so disagreeably strong I can not conceive how any

human being could have relished them. In this case the "*blue line*" was very plainly defined.

One word in reference to Saturnine paralysis. It has been stated, upon good authority, that the extensor muscles of the hand and forearm are usually *first* attacked. This has not been my experience; for, in the limited number that have come under my observation, I find it about equally divided between the muscles of the *anterior femoral* and the extensor muscles of the forearm. It is but just I should state that I have never seen but one case of *complete* paralysis, and that was of the *hand*. You will find, however, that old painters complain more frequently of "*weakness*" of the muscles of the leg than of the hand.

In conclusion, I would respectfully call the attention of the profession to this subject, hoping it will receive their careful consideration. I feel convinced that, upon investigation, it will be found to be a vein that will well repay more general investigation, and that will, in all probability, explain many cases of unexplained disease which so frequently occur in general practice, especially of that class of nervous and paralytic disorders in which at times there is no clue to their origin.

ONIONS DURING EPIDEMICS.

Dr. John B. Wolf says: "In the spring of 1849 I was in charge of one hundred men on shipboard, with the cholera among the men. We had onions, which a number of the men ate freely. Those who did so were soon attacked, and nearly all died. As soon as I made this discovery their use was forbidden. After mature deliberation I came to the conclusion that onions should never be eaten during the prevalence of epidemics, for the reason that they absorb the virus and communicate the disease, and that the proper use for them is sliced and placed in the sick room, and replaced with fresh ones every few hours. It is a well established fact that onions will extract the poison of snakes; this I personally know. Some kinds of

mud will do the same. After maintaining the foregoing opinion for eighteen years, I have found the following well attested: Onions placed in the room where there is smallpox will blister and decompose with great rapidity; not only so, but will prevent the spread of the disease. I think as a disinfectant they have no equal, when properly used; but keep them out of the stomach. If need be, the foregoing (which I have greatly abbreviated) can be attested on oath. Let us have all the facts bearing upon the subject.

TREATMENT OF CORNS.

In the treatment of this troublesome affection Dr. E. Wilson truly says: "That to remove the cause is a favorite dogma of medicine; but the removal of the cause is not always practicable; hence we must study how we can best afford relief to these troublesome disorders. The laminated corn, or callus, produced by pressure, congestion, and increased formation of epidermis, may be softened by moisture, as by soaking in warm water, by the application of a starch or soap poultice; and being softened, the thick cuticle may be thinned by scraping with a blunt knife, or the albuminous epidermis may be dissolved by an alkaline solution and moderate friction. When the thickening has been reduced sufficiently, it may be kept down by daily washing with soap. The soft corn requires removal with the knife; if it be of moderate size a single pinch with a pair of pointed scissors will effect its removal, while the hard callus will require patient digging with the point of not too sharp a knife. The eye of the corn may always be made visible by rubbing the part with eau-de-cologne, or spirits of wine, and any remains of the core may be detected in this way either during or after the operation. After the operation the corn should be covered with a piece of soft plaster for a day or two, and a perforated plaster of buff leather or amadou subsequently worn to keep off pressure from the centre of the growth. The removal of a corn may be very considerably aided by the use of

the compound tincture of iodine painted on the swelling. When the corn is painful this application subdues the sensibility, and renders the corn dry and pliable, and easy of removal by means of a file. Soap and water, so useful to the skin in many ways, are especially serviceable to feet afflicted with corns, and particularly when they are soft corns. Daily washing with soap, and the subsequent interposition of a piece of cotton wool between the toes, may be considered as a cure for soft corns. And in these cases the skin may be hardened by sponging with spirits of camphor after the washing. The cotton wool should be removed at night, and this is a good time for the use of the camphorated spirit."—*Wilson on Diseases of the Skin.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By GUNNING S. BEDFORD, M. D., Professor of Obstetrics and Diseases of Women and Children in the University of New York. Fourth edition, revised and enlarged. William Wood & Co.: New York.

We are under obligations to the author for the above work, to whom we return our sincere thanks.

Perhaps no medical work has ever been presented to the American profession which has met with such unreserved praise as this. The first edition was issued in 1861, and now, in less than seven years, a fourth is called for. We can add but little to our previously expressed admiration of Prof. Bedford's works. The present stands, deservedly, as the very best text book on obstetrics published, useful not only to the student, but to the practitioner, as a needy friend for reference, and also to the lecturer on obstetrics, as the best and most perfect plan ever proposed for teaching this very important department of medicine. We unqualifiedly recommend the work to our readers. We append Prof. Bedford's preface to the fourth edition:

"The present edition of the Principles and Practice of Obstetrics has been thoroughly revised, and some important additions made which, I trust, will not be unacceptable to the reader. Besides alluding more particularly than I had previously done

to the interesting subjects of Anæsthetics and Twin Pregnancy, I have devoted an entire lecture to the complications of Pregnancy, in which are discussed various topics of importance, such, for example, as Chorea, Paralysis, Jaundice, etc.; which cannot fail to elicit the attention of the obstetric student."

ANNUAL ABSTRACT OF THERAPEUTICS, MATERIA MEDICA, PHARMACY AND TOXICOLOGY, FOR 1887. By A. BOUCHARDAT, Professor of Hygiene to the Faculty of Medicine, Paris, etc. Printed and edited by M. J. De Rosset, M. D. Philadelphia: Lindsay & Blakiston. 1888.

Dr. Rosset has rendered our profession good service in translating this "Abstract of Therapeutics, &c.," for by many the original is not seen, or if so, not understood. We have nothing exactly like it in English, though the labor of compiling such a work would be well repaid by the attention and appreciation it would receive.

Bouchardat, in passing over the field of therapeutic literature, has very wisely excluded the uncertain actions of very many medicinal substances, preferring to give what is really known of effects, so far as they can be ascertained, or to point out what may properly be deduced where chemical observations will warrant. The whole range of Therapeutics and Materia Medica is thus passed over, and much valuable material is preserved from the oblivion to which it otherwise would be doomed if left scattered over the field of journal literature or clinical reports where it was first sown.

The work concludes with a memoir on Gravel and Gout, by Bouchardat himself. To those whose attention is much drawn to Therapeutics as a specialty the book is invaluable. We desire in this connection to refer particularly to a serious mistake in the translation, on page 139. The formula should read as follows:

Iodide of Arsenic,	-	-	-	-	-	8 grains.
Distilled Water,	-	-	-	-	-	80 drachms.
Mix and dissolve by heat in a glass matrass, and add:						
Biniodide of Mercury,	-	-	-	-	-	6 grains.
Iodide of Potassium,	-	-	-	-	-	45 or 60 grains.

LECTURES ON ORTHOPEDIC SURGERY! Delivered at the Brooklyn Medical and Surgical Institute, by LOUIS BAUER, M. D., M. R. C. S. Second edition, revised and augmented, with eighty-four illustrations. New York: W. Wood & Co. For sale by Peter Smith, 821 North Fourth street.

These lectures have already been brought before the medical public in the Philadelphia *Medical and Surgical Reporter* of 1863 and 1864.

As a treatise on deformities we have very few works to compare with it, so thorough and so exhaustive has the author made its consideration.

To those devoting attention to this specialty we can heartily recommend the study of the work.

It is gotten up in the usual excellent style of the publishers, and will make a valuable addition to the library of every physician.

A NEW PROPERTY OF THE BROMIDE OF POTASSIUM. Its power in checking the Reflex Nausea, induced by the administration of Anæsthetics. By ALEX. J. STONE, M. D., assistant in practice to Prof. H. R. STORER. Boston, 1868.

This pamphlet well illustrates, by a detail of thirty cases, the value of the Bromide in Nausea after the use of Anæsthetics.

The dose is larger than what is ordinarily used, being from thirty to forty grains every thirty, forty-five or sixty minutes, as may be found advisable.

The attention of the profession is called to this remedy for the above purpose; it will undoubtedly prove a valuable acquisition.

POPULATION OF GREAT BRITAIN.—Great Britain now contains thirty millions of people, an increase of two and a half millions since 1852, and during the time she has furnished three millions of emigrants to this country, Australia, and other parts of the globe. During the last fifteen years Ireland has decreased in population nearly eight hundred thousand.

MEDICAL REPORTER.

ST. LOUIS, APRIL 1, 1868.

The Board of Health.—We are indebted to the courtesy of Dr. R. H. O'Brien for a copy of the first annual report of the Board of Health of the city of St. Louis, a pamphlet of 156 pages, presenting to our citizens, in detail, the operations of a department so essential to the welfare of any city, certainly of ours, embracing a population of 230,000 inhabitants. We are gratified at the induction of the new system, by which from year to year the sanitary condition of the city will be made known; our reputation abroad demands it, for hitherto, without sufficient reason however, we have not stood first in our sanitary reputation. It is proper, too, that every citizen should be informed from time to time of what is all important to know, the manner in which life and health shall best be preserved. That this has not been done before arose from the fact that no separate and distinct health organization existed; the so-called Board of Health being composed of members of the City Council, whose attention was for the most part distracted by municipal affairs.

We will say nothing of the past however; we are only too glad to recognize the existence of an organization whose legitimate and sole duties are for the improvement of our sanitary condition. Called into operation after the ravages of an epidemic, the Board of Health came up nobly to the task which was before them. With everything relating to the sanitary condition of a large city to organize; nay more, to bring order out of the confusion which reigned supreme; to undo, that it might commence from the beginning; to overhaul every institution provided by the city for the relief of the sick; "to supervise the ice and slaughter houses, dairies, ponds, sewers, wells, distilleries, tanneries, hide houses, gutters, markets, soap and other factories, and every subject that could possibly affect the sanitary condition of the city;" this was the labor which was voluntarily assumed by a few men for the sake and safety of

our beloved city. This would have been comparatively insignificant if they could at the same time have received the sympathy and support of the entire community; but the self-interests of some individuals, the prejudice of others, because things were not as they were, the contentious opposition to wholesome regulations, all combined to make the course pursued by the Board anything but a way of pleasantness. Still, with the wish to do what was right, and the resolution to adhere to that wish, with the encouragement of the great mass of the community, the Board enters upon its second year with more certainty as to its future course, and with every prospect of future good wishes and support.

On the whole, we are satisfied with this first annual report; it does credit to the various officials concerned in the Health Department; it is an exhibit of a vast amount of experience gathered in the short space of a year, and separated from an enormous mass of incongruous items, the natural accumulation of a new system first put into operation. With this information the Board, for we are glad to see the organization unchanged, can enter upon another year with clearer views of what may be required; its work is comparatively less, for the field is more open to inspection, and each step in advance can be taken with a firmness, the result of a positive knowledge already acquired.

We trust that the various suggestions made in the report will be carried out, not forgetting the "vegetable order," made famous by the difference of opinion among the physicians.

Indeed, if the jurisdiction be extended, as is probable, then we shall have better proof of the value of that enactment by which unripe fruits and stale vegetables were forbidden for the public's use.

We refer our readers to the report itself for the various very excellent ideas of the President of the Board for its future action.

Dr. O'Brien, Clerk of the Board, refers to the negligence of physicians in filling up the certificates of deaths; now that our

mortuary statistics can be made of some use, we hope with him that more attention may be paid to this subject.

We thank him for the suggestion which he has made, and others before him, of registering births and marriages; some legislative action may be required, but the time has come when we can no longer avoid this system consistently with the object of the Board.

The report of the Health officer shows that his position has been no sinecure. With his multifarious duties, he has gained much credit by their satisfactory and thorough accomplishment.

In reference to the cholera of 1866, we beg leave to differ with him as far as relates to its introduction to the city. We do not think that it could be plainly referred to the landing of parties by railroad or steamboat. For confirmation of our views, we refer to our report of that epidemic in the first volume of the **REPORTER**.

In the report of the manager of the City Hospital, Mr. C. J. Rasch, we find a very excellent history of that institution, which we have long wished to see published.

Dr. Clark, resident physician of the City Hospital, has given us a very clear insight into the condition of that institution under his predecessor. At the present time it compares favorably with any hospital in this country. We believe, if his suggestions were followed out, of making such additions to the building as necessity requires, we should have, under the present able medical management, as excellent an institution as well could be desired.

We have devoted more space to this report of the Board of Health than we at first intended, though not more than it deserves. We will only make one remark as a criticism, that the proof sheets of the next report shall be read, for too great a number of typographical errors have crept in among the tables of diseases in the mortality lists. Otherwise, we close as we began, congratulating the city of St. Louis that at last it has a health organization which, judging by its past year, will reflect infinite credit on its founder, the Hon. Jas. S. Thomas, our

worthy mayor, and at the same time will remove the reproach which has been hitherto cast against the otherwise fair reputation of our city, that it is one of the most unhealthy of the West.

The following persons have been appointed by the Board of Health to fill the various offices for the ensuing year :

Dr. E. A. Clark, Resident Physician of City Hospital.

Dr. James W. Clemens, Health Officer.

Dr. R. H. O'Brien, Clerk of the Board.

Philip Winters, Assistant Clerk of the Board.

Dr. R. A. Quarles, Assistant Dispensary Physician.

Wm. T. Mathews, Apothecary of Dispensary.

Stephen F. Adreon, Steward of Quarantine Hospital.

Mrs. S. F. Adreon, Matron of Quarantine Hospital.

Henry Hickman, Steward Small Pox Hospital.

Dr. Thomas Fox, Assistant Physician of Quarantine Hospital.

Dr. Edward C. Hayes, Assistant Physician at City Hospital.

Henry C. Moore, Messenger of the Board.

Missouri Medical College.—The annual commencement exercises of this institution took place on February 28th. The degree of Doctor of Medicine was conferred on Messrs. R. Alvin, H. C. Andrews, W. J. Baird, J. Z. Barrett, W. S. Barron, J. A. Briggs, T. C. Boulware, S. L. Bradley, W. S. Carr, R. C. Calvin, S. W. Davis, H. S. Donohoe, W. L. Flemming, M. Swerin, A. A. Glascock, J. P. Harper, J. R. Loyd, C. R. McDowell, M. Mumford, W. Ray, J. P. Stanell, E. S. Stevenson, J. T. Sloan, S. H. Southerland, J. D. Trumbull, L. V. Young.

The degree ad eundem was conferred on Dr. C. Chapman, C. S. Youree, N. Cash, W. O. Pierce, W. Hammill, J. M. Youngblood, S. G. Palbson, J. McAfee, L. M. Peebles, S. T. Williams.

The valedictory address was given by Prof. McPheeters, and the closing remarks by Prof. J. N. McDowell.

Hot Springs of Arkansas.—These springs are situated on the western slope of Hot Spring Mountain (being a margin of the Ozark group of mountains), at an estimated elevation of 360 feet above the level of the sea. The village and valley respectively bear the name of Hot Springs, and present, in location, an attractive and romantic appearance. The Springs are distant, westerly, from Little Rock about fifty miles; northerly from Arkadelphia about thirty-five miles.

The following is said to be a correct analysis of and supposed properties of the waters: Silicates with base, bicarbonate of lime, bicarbonate of magnesia, alumina, with oxide of iron, arseniate of iron, carbonate of soda, carbonate of potash, carbonate of lithia, sulphate of magnesia, chloride of magnesia, oxide of manganese, sulphate of lime, arseniate of lime, bromine, iodine, a trace, organic matter, a trace.

The springs, in all, number fifty-four, having a mean temperature of 134° Fahr't. They range respectively from 93° to 150° Fahr't, and totally discharge about 317 gallons of water every minute. The properties of the waters depend not alone upon the caloric and antacid qualities, but all contain carbonates of the alkalies and alkaline earths—agents well known to possess an active eliminative agency; consequently they produce valuable alterative effects in chronic diseases.

The season for visiting the springs is generally from the 1st of May until the 1st of October; but April and November are excellent months for bathing, and are equally advantageous. The mild latitude and genial temperature of this section of Arkansas during the winter months makes it truly a desirable resort for those sufferers who reside in cold, rigorous and variable climates, for the salubrity of the climate, especially in summer, is unsurpassed. No part of this continent within the same latitude, is more inviting to invalids than this section of Arkansas. The air is pure and rarefied—the long, genial summer twilights are inspiringly refreshing—the nights throughout the hot months are delightfully cool and invigorating—making

blanketing and woolen apparel desirable throughout the entire season.

Further information can at all times be obtained by addressing **GEORGE W. LAWRENCE, M. D.**, Resident Physician.

Dr. Geo. Syng Bryant, of our city, well and favorably known as a gynecologist, has removed to Lexington, Ky. The health of the Doctor's family has necessitated this change. We must hope they may be greatly improved by the pure air and pleasant associations of the Blue Grass region, and would bespeak for them a favorable reception by the profession and citizens of Lexington.

Dr. Bryant is well posted in his profession, and in the surgical treatment of diseases of females has no superior in the Mississippi Valley. He is the inventor, or improver, of several valuable instruments, among them his modification of Sims' Speculum so well known in this city, and the best Speculum in use—indeed, leaves nothing to be desired in this line. He was also, we believe, the first in this country or Europe to use carbolic acid in the manufacture of sponge tents. But these are minor matters. The Doctor's fine mechanical genius gives promise of greater things. M.

Dr. Geo. Engelmann.—This gentleman is about leaving us, to pass a few months in Europe in his usual pursuits. He is so well known in the world of science that he will be welcomed wherever he goes. To such a fame few men reach; and we of St. Louis may truly congratulate ourselves in having such a man whom we can claim for our own.

A few evenings ago the German Medical Society gave to Dr. Engelmann a handsome entertainment on the occasion of his departure. Certainly, all outside of that society will join in wishing him God-speed and a safe return.

The Missouri State Medical Association.—The annual meeting of the Missouri State Medical Association will be held in St. Louis, on April 21st, 1868. We hope to see a numerous delegation from the country.

St. Luke's Hospital.—We refer our readers to the advertisement of St. Luke's Hospital. We hope that the profession will use every opportunity to sustain it and advance its interests. We can assure our friends that the institution is all that is represented; and its facilities for treating the sick are such as to meet the wants and means of every patient, no matter what may be his station in life.

Hegeman & Co., Chemists and Druggists, New York.—We would call the attention of our readers to the preparation put up by this old and reliable house. Their *Cordial Elixir of Calisaya Bark*, and *Elixir of Calisaya Bark with Pyrophosphate of Iron*, are preparations we can especially recommend as pleasant and reliable; also, their *Medicinal Cod Liver Oil*, which is very pure and warranted genuine. See their advertisement on page 22, Advertising Department.

Removal of Freckles.—D. Savignac employs successfully a lotion of Vichy water for two or three minutes night and morning. After the washing, the skin is allowed to dry without wiping it.

A New Alloy of Aluminum, consisting of one-third silver and two-thirds of aluminum, has been introduced into the arts. It is said to be harder than silver, but more easily engraved.

Fecundity.—A single plant louse will, in the fifth generation, have a progeny of six billions of lice, and will be still living.

Refined Saltpetre is one of the best remedies for sore gums or throats. Take a bit as big as a pea and let it slowly dissolve in the mouth, and from time to time repeat this, and great relief will be experienced. We have known severely inflamed throats—with a tendency to ulceration—entirely cured by this simple remedy.

VITAL STATISTICS OF ST. LOUIS.

For the month of February, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	246	Still Born.....	88
White Females.....	137	Under five years of age.....	165
Colored Males.....	26	Between five and twenty years...	42
Colored Females.....	20	Between twenty and forty years...	95
Born in the United States.....	233	Between forty and sixty years....	58
Born in Germany.....	74	Between sixty and eighty years...	25
Born in Ireland.....	49	Bet. eighty and one hundred y'rs	6
Born in other countries.....	23	Total.....	429

DISEASES.

Abscess.....	1	Fever Typhoid.....	36
Anemia.....	4	Gastritis.....	5
Apoplexy.....	5	Hemorrhage.....	2
Atrophy.....	2	Hepatitis.....	2
Bronchitis.....	5	Hydrocephalus.....	3
Cancer.....	3	Hydrothorax.....	3
Carditis.....	4	Inflammation.....	5
Cerebritis.....	2	Labor.....	2
Convulsions.....	10	Marasmus.....	25
Congestion of Brain.....	11	Meningitis.....	13
Croup.....	4	Metritis.....	1
Debility.....	8	Nephritis.....	2
Dentition.....	4	Old Age.....	4
Delirium Tremens.....	4	Paralysis.....	5
Disease of the Heart.....	4	Peritonitis.....	5
Diarrhoea.....	8	Phthisis.....	52
Diphtheria.....	2	Pneumonia.....	55
Dropsy.....	3	Premature Birth.....	6
Dysentery.....	7	Rheumatism.....	1
Eclampsia.....	4	Scarlatina.....	1
Encephalitis.....	3	Scrofula.....	3
Enteritis.....	5	Suffocation.....	1
Erysipelas.....	2	Syphilis.....	2
Fever Congestive.....	4	Tetanus.....	3
Fever Intermittent.....	4	Trismus.....	5
Fever Remittent.....	4	Ulceration.....	2
Fever Puerperal.....	2	Wounds.....	3

Total number of Deaths for February, 1866.....	360
Total number of Deaths for February, 1867.....	295
Total number of Deaths for February, 1868.....	429

T H E

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EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

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DEFECTIVE ALIMENTATION A PRIMARY CAUSE OF DISEASE.

WITH FORTY-ONE ILLUSTRATIONS ON WOOD.

By J. H. SALISBURY, M. D., Cleveland, Ohio.

[Communicated for the St. Louis Medical Reporter.]

Continued from page 84.

TREATMENT.—The therapeutic means resorted to in treating other forms of dyspepsia and diarrhoea have no permanent good effect in these. The same thing may be said of all the other pathological states and conditions arising from a defective alimentation. These diseases seem thus far to have defied, to a great extent, the medical skill of armies and of private practice, from the very fact that the true cause and pathology have not been clearly understood. To-day a prescription is administered which, for the time, appears to produce beneficial results, and the physician flatters himself with the hope that he has at last discovered the true therapeutic combinations that control and cure the disease. He administers them in another apparently parallel case, and is disappointed in getting either no response, or, perhaps, none that is favorable. By this time, perhaps, his patient, who had been apparently improving under the remedy, begins to get worse. His faith is shaken, and prescription after prescription is resorted to, but always finally with the same unsatisfactory results; and eventually, when his patient gets much reduced, he falls back on dietetic treatment

and nursing, and finds that under this plan the sick man fails no faster, really, than when under the daily influence of medicines.

In army practice the almost universal remark is, that chronic diarrhoea does not respond to remedies. That, with or without treatment, to-day it will be better, to-morrow worse; this week improving, the next reducing the patient lower than ever.

The reason of all this uncertainty is, that the true cause and pathology of the disease are unknown to the practitioner, and, of course, all the plans of treatment must be empirical. He may hit upon some good remedial means for answering certain conditions of the disease, but others not being met, his treatment fails.

From the previous observations, experiments and microscopic researches, the exciting cause, the resulting conditions and pathological lesions and complications appear to be evident. The plan of treatment indicated, is first to *remove the cause*, next to correct the abnormal actions in the alimentary canal and in the system generally, and finally to aid nature in repairing the various lesions produced and in restoring the normal tone of the affected parts. The first indication, then, is to change the fermentative amylaceous food to a varied, easily digested albuminous animal diet; the next, to check fermentation in the alimentary canal, and remove the layer of yeast adhering to the intestinal walls, and to get rid of the fermentative state excited in the epithelial tissue; to correct the saccharine or glycogenic conditions of the secretions and system; and lastly, to repair the lesions and restore the normal tone of the alimentary canal, lungs and heart, produced by causes and conditions favoring zymotic developments.

In the early or acute stage of the disease, a simple albuminous animal diet, preceded by a cathartic dose of Rochelle salts, with the moderate use of the vegetable acid salts of potassa and iron in dilute solutions is, in most cases, all that is necessary to rapidly cure the disease. In the chronic stage, after the appearance and development of colloid matter in the stomach and large intestine, the treatment should be extended to meet the alimentary and other abnormal conditions; although, even in

this stage, an albuminous animal diet of beef and chicken essences, tea and soups, and soft-boiled eggs, oysters, etc., preceded by a cathartic dose of Rochelle salts, to clean out the intestinal ferment, and followed by the free use of dilute solutions of the vegetable acid salts of potassa and iron, are all that, in many cases, are required. If fermentation continues, bloating the stomach and bowels evenings and nights, a dose of dilute sulphuric acid or bi-sulphate of soda should be administered before supper and bed time. Others require a more extended treatment to meet the abnormal lesions produced in the alimentary canal, and excited in other important organs—as the lungs, heart and nervous system. The first indication in such cases, after removing the intestinal ferment, is to keep the parts well lubricated, to allay irritation as much as possible, and to gently promote intestinal secretion and absorption. The bowels are kept constantly lubricated with the following emulsion :

<i>R.</i> —Ol. Olive	3ij.
Ol. Terebinth.	3ij.
Gum Acacia	
Aquæ aa q s to make emulsion	3viij.

S. Dose.—A tablespoonful morning, noon and night.

To allay irritation, the following suppository is used :

<i>R.</i> —Pulvis opii.	gr. x
Butter cocoa	3iss.

Melt, stir well together and run in moulds, so as to make suppositories. No. x.

S.—Use one every night on retiring, and in cases of extreme irritability of the rectum and colon, use one night and morning.

To promote intestinal secretion and absorption, and to excite the flow of urine, give as follows :

<i>R.</i> —Rochelle Salts	3ij.
Aquæ	3xvj.

M. S.—A tablespoonful morning, noon and night in half a glass of water.

It is seldom that a case is met with that will not yield to the foregoing simple dietetic and remedial means. In extreme

cases, where there are grave lesions and abnormal conditions that do not yield to these means, I have used with marked benefit the following prescriptions, which seem to operate beneficially in producing an alterative influence in the system and alimentary epithelial surfaces. They also excite hepatic, splenic and mesenteric activity, thereby relieving the clogged-up vessels and congested intestinal capillaries :

<i>R.</i> —Potass. Iodid.	• • • • •	ʒiii.
Plumbi. Iodid.	• • • • •	ʒii.
Tr. Iodinii	• • • • •	ʒiii.
Simpl. Cerat.	• • • • •	ʒiss.
Glycerine	• • • • •	ʒss.

M. S.—Apply over abdomen every night and morning thoroughly.

<i>R.</i> —Tr. Iodinii comp.	• • • • •	ʒiss.
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S.—Paint over abdomen every morning.

<i>R.</i> —Ferri per Sulph.	• • • • •	gr. xxx.
Morphiæ Sulph.	• • • • •	gr. i.
Ext. Nucis Vomicae	• • • • •	gr. iv.
Quinia Sulph.	• • • • •	ʒss.

M.—Make pills, No. xx. • • • • •

S.—Take one every four or six hours if necessary.

<i>R.</i> —Sodæ Bi-Sulphite	• • • • •	ʒi.
Aquæ Menth. Pip.	• • • • •	ʒiv.
Aq. Camphoræ	• • • • •	ʒiv.

M. S.—Take a tablespoonful after each meal.

<i>R.</i> —Acid Sulphuric Aromat.	• • • • •	ʒiii.
Quiniæ Sulph.	• • • • •	ʒii.
Aquæ	• • • • •	ʒi.

M. S.—Put two teaspoonsful in half a pint of warm water, and wash the body and limbs all over every night, and wipe thoroughly dry after.

Once in about seven to ten days the above treatment should be suspended, and during the interval a dose of Rochelle salts (preceded, if properly indicated, by a mercurial, to promote hepatic secretion) administered for cathartic and diuretic purposes. The former prescriptions should then again be resumed

after an interval of three or four days, and continued and discontinued as before. The patients should be kept as strictly as possible on a variegated and easily digested albuminous animal diet, with which may be mixed a small quantity of non-amylaceous vegetables, and be allowed to exercise in the open air whenever their condition will permit.

They should take a warm saline bath twice a week, and occasionally be sponged with whisky. In armies, patients affected with this disease should be placed in wards by themselves where they can receive special attention in medical treatment, diet and exercise. When there is a malarial influence in the system, quinine may be freely used in addition to the foregoing means. It may be given alone, or combined with iron when there is much anæmia. In obstinate cases inunctions of iodine, or the application of its tincture to the surface of the abdomen, frequently results in marked benefit.

Dr. Hayes, so well known as a successful Arctic explorer, and who was surgeon in charge of the Saterlee (U. S. A.) Hospital, West Philadelphia, of three thousand beds, has had large experience in scorbutic diseases. He has had also a large number of cases to treat in the West Philadelphia Hospital of chronic diarrhœa, contracted in the peninsular campaign, and is satisfied that there is a scorbutic condition of a peculiar type to be attended to in this disease, and which is one important cause of the obstinate character of the complaint when treated with the usual remedies and diet for ordinary diarrhœa. He treated the disease more successfully than I found it treated in any other hospital, either East or West, during the war.

DIET IN CHRONIC DIARRHŒA.

The diet should be as strictly albuminous as possible, avoiding all dry amylaceous food, also beans and peas. The food should be reduced to solution, or as nearly so as may be, so that the alimentary canal will have as little as possible to do in digesting it. Raw beef, chicken and beef essences, teas and soups, oyster soup and soft boiled eggs, with milk, and also non-amylaceous vegetables in small quantity, should make up the important mate-

rials of the diet list. When soups are made from either chicken, beef or oysters, the materials should be chopped fine, then placed in cold water, and brought slowly and gradually to a boil, and finally boiled thoroughly, so that even the solid portions, not dissolved, fall in pieces. A soup made in this way will be in a condition to be readily and easily taken up and assimilated without causing unnecessary irritation of the highly diseased lining of the alimentary canal. The patients should not be allowed to overload their stomachs. They should be controlled, so as to take at any one time only a moderate quantity of food, and, if necessary, repeat the feeding frequently. If there is any fermentation and generation of gases in the stomach and intestines evenings and nights, diluted sulphuric acid should be administered before supper and previous to retiring. For further particulars see foregoing treatment.

While carrying on the examinations at Dennison (U. S. A.) Hospital, Ohio, in November, 1868, I obtained permission from Dr. Cloak, the efficient surgeon in charge, to remove the most obstinate cases of chronic diarrhoea of the hospital into a ward by themselves. Ward 80, in Dr. Palmer's division, was cleaned and set apart for this purpose. November 19th, nineteen obstinate and well marked cases of the disease of long standing were removed into the ward and placed on albuminous diet, and on anti-scorbutic and anti-fermentative remedies. The ward was placed in the charge of A. A. Surg. Palmer. On December 22d I received a report of these cases, when they had been under treatment twenty-eight days.

For the purpose of showing briefly the good results obtained from the use of an albuminous diet, &c., I here insert the following letters :

DENNISON (U. S. A.) GENERAL HOSPITAL, }
Camp Dennison, O., Dec. 20, 1868. }

Dear Doctor : I enclose you Dr. Palmer's report of the diarrhoea ward. The treatment is highly satisfactory. Let us hear from you.

Truly your friend,

B. CLOAK, Surg. U. S. V., Surgeon in Charge.

DR. SALISBURY.

DENNISON (U. S. A.) HOSPITAL, Dec. 17, 1868.

Sir : The following is a report of those cases of chronic diarrhoea examined by you. * * * (The detailed report of the cases is here omitted.)

I am pleased with the use of an albuminous diet in chronic diarrhoea. It undoubtedly has had much to do with the successful treatment of the above cases. I like it far better than the farinaceous.

All these cases were confirmed chronic diarrhoea. The results obtained met my expectations. An improvement was manifested in every one of the nineteen cases.

The Transfer Board for the invalid corps has just examined ward 30, and taken several of its number for first and second battalion duty, so that I will be unable to report further into the condition of their cases. A few will be fit for their regiments. Hoping to hear from you soon,

I remain, most respectfully, your ob't serv't,

CHAUNCEY D. PALMER, A. A. Surg. U. S. V.

DR. SALISBURY.

PROPHYLACTIC MEASURES.

If soldiers could be provided with a plenty of *desiccated beef and vegetables*, and *less army biscuit*, on their marches, and on all occasions when they can not cook meats, affording more of an albuminous diet, they would be much less liable to constipation, and the resultant fermentation of the alimentary materials, and consequently less subject to the exciting causes of the so-called chronic diarrhoea. The experiments thus far with army biscuit in producing chronic diarrhoea have been most highly successful and confirmatory. It, when used as the sole or principal food, produces the same train of symptoms, kind of stools, conditions of the system, and complications, as are characteristic of chronic diarrhoea.

The causes we will here briefly enumerate :

1. Too large a proportion of dry amylaceous matter in the food for healthy alimentation.

108 *Defective Alimentation a Primary Cause of Disease.*

2. This dry amylaceous food invariably tends to produce constipation when too largely used.

3. The farinaceous matters remaining in the alimentary canal an undue time fermentative changes set in, and gradually increase from day to day, if the cause be not removed, and eventually there is produced a highly saccharine or glycogenic condition of the system.

4. Cryptogamic (yeast and algoid) plants are developed in vast numbers in the alimentary canal, generating large quantities of carbonic acid, which, with the ferment organisms, act as a peculiar irritant poison and cathartic, as is evidenced from the cancerous state excited in the alimentary membranes, the character of the discharges, the paralytic tendencies produced, and the disposition excited to tuberculosis, thrombosis and embolism.

The prophylactic measures indicated are plain. They are either to avoid, to remove or counteract the cause, and may be briefly stated as follows:

1. Change the dry amylaceous diet to one that is more albuminous, and which is less liable to produce constipation; and when it does produce this condition, less disposed to fermentative changes that develop yeast and algoid plants and carbonic acid. The *desiccated beef and vegetables* make a very palatable, concentrated, portable, cheap, appropriate and condensed form of albuminous animal and vegetable food, that actually requires no cooking, and which could be supplied the men on marches, and whenever they are so placed as to be unable to carry and cook meat and vegetables.

2. The men should not be allowed to become constipated, and retain food an undue time in the alimentary canal.

3. The fermentative condition in the alimentary canal should not be allowed to gain an ascendancy. Whenever flatulent tendencies manifest themselves, especially during the evening and night, some of the anti-fermentatives mentioned under the treatment of the disease should be administered before supper and previous to retiring, and followed, if necessary, by a cathar-

tic dose of Rochelle salts to promote free secretion from the alimentary mucous surfaces.

If these simple prophylactic means were strictly observed, and followed out in detail, there is the strongest evidence for believing that chronic diarrhoea, with all its grave complications, would become a rare disease in armies.

PRESENT ARMY RATION.

Present army ration in the field, and its modification to meet the emergencies of active campaigns.

Daily Ration for	100 Men. Lbs. Oz.	1 Man. Lbs. Oz.
Pork or Bacon.....	75 00	0 12
Or Salt or Fresh Beef.....	125 00	1 4
Soft Bread or Flour.....	187½ 00	1 6
Or Hard Bread.....	100 00	1 0
Or Corn Meal.....	125 00	1 4
Beans and Peas.....	15 00	0 2 4-10
Rice or Hominy.....	10 00	0 1 6-10
Green Coffee.....	10 00	0 1 6-10
Or Roasted Coffee.....	8 00	0 1 28-100
Or Tea.....	1 8	0 0 24-100
Sugar.....	15 00	0 2 4-10
Vinegar.....	8 00	0 1 28-100
Adamantine or Star Candles.....	1 4	0 0 1-5
Soap.....	4 00	0 0 16-25
Salt.....	8 12	0 0 6-10
Pepper.....	0 4	0 0 1-25
Potatoes.....	80 00	0 4 8-10
Molasses.....	2 00	0 0 8-25

This makes a substantial and good diet, save that of the army biscuit—part of it is entirely too large—so long as the men are in a position to avail themselves of the means of transporting their food and cooking their meat and vegetables. At such times, however, the men are in camp, and not exposed to the hardships and fatigues of military life. But as soon as they are deprived of these means, by active duty in the field, in the way of long marches, they are thrown often entirely upon a dry army biscuit diet, and this at the very time when their systems, overtaken with arduous and fatiguing duties, require the most nourishing food to support and sustain them. This diet affording but a part of the normal constituents of healthy alimentation, the men on it soon begin to show signs of enervation and the long train of abnormal symptoms previously described. Here is evidently, at the precise periods when the soldiers

110 *Defective Alimentation a Primary Cause of Disease.*

require the best nutrients, an important link in their alimentation left out. The very bone, nerve and muscle of their food are wanting. Can these be readily supplied? We answer, yes. Our *desiccated beef and vegetables* furnish albuminous, animal and vegetable food of the finest quality, that do not necessarily require cooking, and which are so condensed, by being deprived of water (an unnecessary weight to transport), that the men can carry five to six days' rations of these materials as easily as they now carry one of their ordinary food. Upon such food the men can travel and endure hardships and exposures without becoming enervated and diseased.

We here introduce the ration modified so as to meet the emergencies of active campaigns :

ARMY RATIONS FOR ACTIVE CAMPAIGNS.

Daily Rations for	100 Men. Lbs. Oz.	1 Man. Lbs. Oz.
Desiccated Beef and Vegetables.....	25 00	0 4
Hard Bread or Army Biscuit.....	25 00	0 4
Roasted Coffee.....	8 00	0 1 28-100
Or Tea.....	1 8	0 0 28-100
Soap.....	4 00	0 0 16-100
Salt.....	8 12	0 0 6-10
Pepper.....	0 4	0 0 1-25

This is a good ration, upon which the men have all the constituents required for healthy alimentation. It furnishes the system with all the nutrient materials necessary for the healthy support of the tissues of the body when the men are exposed to the fatigues and hardships of the campaign.

With roasted coffee, the daily ration per soldier is 10 76-100 ounces; with tea, 9 72-100 ounces; thirty days' rations, with coffee, weigh 19 18-16 pounds; thirty days' rations, with tea, weigh 17 86-100 pounds; twenty days' rations, with coffee, weigh 18 17-80 pounds; twenty days' rations, with tea, weigh 11 78-80 pounds.

The four ounces per day per man of *desiccated beef and vegetables* is equivalent to ten ounces of pure lean beef, freed from all bone and fat, or fifteen ounces including the bone, and twenty ounces of fresh vegetables.

This, with the four ounces* of army biscuit, coffee and condiments, make up an ample diet for a soldier undergoing the fatigues and labors of campaigning.

The present daily ration, with beef and coffee, weighs three pounds and 9 88-100 ounces. With bacon it weighs eight ounces less. With beef, therefore, one ordinary ration weighs as much as 5 48-100, or in round numbers five and a half days' rations of the desiccated food. The men could carry in their haversacks of the desiccated food twenty-seven days' rations more easily than they could carry the ordinary ration for five days. The advantage in favor of the former, so far as portability and bulk are concerned, is so great that thirty days' rations of it would not be as bulky and burdensome as would be the ordinary cooked ration for five days.

In executing rapid and long marches the present ration can not be carried in full, on account of its bulk, want of portability and weight. The result is, that after the first three or four days the soldiers are thrown almost entirely upon army biscuit and coffee. A worse diet they could not possibly have. It soon produces constipation and flatulence, which sooner or later results in so much alimentary and systemic irritation and derangement that diarrhoea ensues. This, if allowed to continue for any length of time, becomes an obstinate disease.

Beans and peas, when fed upon to any extent, and persisted in, are a grave cause of alimentary irritation and diarrhoea. Like army biscuit, they at first produce constipation and flatulence, which, if the food be continued to be used too exclusively, soon results in diarrhoea. Every one is familiar with the almost immediate tendency of this kind of food to produce flatulence. In our soup houses, in the large cities, where soup is daily prepared during the winter for feeding the poor, *beans* and *peas* enter largely into its composition. This diet excites in those who feed too exclusively upon it diarrhoeic conditions, which are frequently obstinate in their character.

*Dr. Hayes, the Arctic explorer, issued to his men in the cold northern regions only two ounces of the hard biscuit, with the four ounces of desiccated beef and vegetables, per day per man. This he found to be ample for all ordinary occasions.

112 *Defective Alimentation a Primary Cause of Disease.*

Any one kind of animal food, when subsisted upon too exclusively, results in scorbutic conditions, which finally present diarrhoeic tendencies. With this kind of food, however, the external surface of the body and mouth frequently are the first to exhibit marked abnormal states; while with amylaceous and leguminous food the mucous membranes are the first to present striking derangements and lesions.

One hundred pounds of desiccated beef and vegetables are made up as follows:

100 lbs. of desiccated beef and vegetables are composed of	Desiccated beef, free from bone and fat, 50 lbs., and desiccated vegetables 50 lbs, or 7 lbs. dried onions, 80 lbs. dried potatoes, 18 lbs. dried cabbages, which are equivalent to	250 lbs. of pure fresh beef, freed from bone and fat, or 875 lbs. of beef containing bone and fat; and 425 lbs. fresh vegetables, or 106 lbs. fresh onions, 180 lbs. fresh potatoes, 146 lbs. fresh cabbages, which equals	875 lbs. of beef and 425 of vegetables—	800 lbs. of fresh food,
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We here see that this desiccated beef and vegetables have in one pound eight pounds of fresh food, three and three-fourths pounds of which is beef free from bone and fat, and four and one-fourth pounds vegetables. The beef is freed from bone and extra fat, cooked, cut fine, and carefully dried at a low temperature, so as to not destroy its flavor. The vegetables are sliced or cut fine, and carefully dried at a low temperature, so that all the fine flavor may be preserved; the potatoes being previously cooked, while the onions and cabbages are dried raw. After all are thoroughly dried, fifty pounds of the desiccated meat, seven pounds of the desiccated onions, thirty pounds of the dried potatoes, and thirteen pounds of the dried cabbage, making in all one hundred pounds, are mixed together intimately, and eight pounds of the mixture placed in a hydraulic press, and with five hundred tons pressure forced into a tablet one foot square and one inch thick. The tablets formed in this way are placed nine in a tin can, and two tin cans in a wooden case.

When these tablets are ready for being coated with gelatine they can be cut through the centre, making two tablets of one.

These half tablets measure twelve by six inches, and are a convenient size for packing in the haversacks of the men. Each half tablet weighs four pounds. They are coated with gelatine to prevent the absorption of moisture till required for use.

The cost of this food per pound will not exceed forty-eight cents; one-fourth of a pound twelve cents. It will hence be seen that this kind of food, when the expenses of transportation are deducted, will cost less than the ordinary food.

While armies are in camp, or where they can have facilities for cooking or transporting their food, the ordinary army ration, with one-half the quantity of army biscuit, could be issued. The army biscuit should be lessened, as the present amount makes by far too large a proportion of amylaceous food in the ration for healthy alimentation. *Peas and beans should be entirely excluded.*

The following interesting statements bearing upon this subject are from Dr. I. I. Hayes, the Arctic explorer, who has had large experience in observing the conditions under which scorbutic states are developed, and during his last expedition he was entirely successful in preventing the appearance of this disease among his men :

SATERLEE (U. S. A.) GENERAL HOSPITAL, }
West Philadelphia, December 14, 1863. }

Dear Sir : I take great pleasure in answering your questions. During my first voyage with Dr. Kane scurvy was very prevalent among the crew. This was attributed mainly to a diet consisting of the ordinary *navy ration*, the meat being wholly salted. But little game was obtained.

During the expedition which I commanded in 1860-61, we had no scurvy. This was no doubt chiefly owing to the abundant supply of game which our guns brought us. Reindeer, foxes and water fowl were found in great abundance. I believe, however, that we should have escaped without any symptoms of that terrible disease had we been obliged to subsist on the supplies which we took with us from home, the most useful of which was the *desiccated beef and vegetables* prepared by the

American Desiccating Company in New York. This preparation is made by mixing together equal parts of perfectly dried beef and vegetables. The vegetables used were chiefly onions, potatoes and carrots. The mixture was compressed by hydraulic pressure into solid cakes, four pounds in each. Except a small allowance of *ship's biscuit* (two ounces per day per man) this was my only food when traveling with dog sledges over the ice.

On one of my journeys, I was absent sixty days. There were four of us in the party, and our two sledges were drawn each by seven dogs. The food of men and dogs was the same, and nothing could better suit such traveling in a region where every extra pound is of importance.

I will give you our equipment. Each person had a small buffalo skin, and an extra pair of boots, stockings and mittens. Total weight of extra clothing for four persons, thirty pounds. A lamp, a kettle, four cups and as many spoons made up our mess furniture. Total weight six pounds, or in all, nine pounds per man, and this in a temperature varying from zero to 68° below it. We had a pot of coffee night and morning, and one pound of desiccated beef and vegetables gave the four of us two good meals per day—that is, quarter of a pound to each, or one-eighth of a pound per meal. Occasionally we required a larger quantity, but never more than half a pound more per day. We carried no tent, but slept always in a snow hut, for the building of which we carried only a light shovel. We had, of course, no fire, other than our small lamp for cooking; and this, owing to the smoke, could not be used in the hut. We did not suffer materially from the cold, and none of us were even frost bitten.

I am much surprised that these desiccated meats and vegetables are not used extensively in the army. I paid for the desiccated beef, 60c. per pound, (1860); for the desiccated beef and vegetables, 45c. per pound; and for the desiccated vegetables alone, about 30c. per pound. So you see it is not costly. A soldier could carry in his breeches pockets food enough to last him a week. A four-pound cake stuck in his haversack would,

at the least, last him eight days, and, with economy, a much longer period. I have lived on one sixteen days.

If I were to organize an army I should first build a desiccating establishment, and would sell my commissary wagons to pay for it. The army might then trust to its legs and not to wheels, and would be less liable to be impeded by mud and poor roads.

The larger part of our food, consisting of water, is removed by this desiccating process; and thus six pounds of meat is reduced to one, and vegetables nearly twenty to one, without depriving either of any of their nutrient qualities. The soldiers on the march can always find a stream, spring or well, from which the needed water may be supplied to swell his beef and his vegetables to their natural size; and wherever there is a fence or a tree he can have a fire to cook his soup, the most refreshing and most useful form in which a soldier or a traveler can prepare his food. If it should so happen that the means for cooking are not at hand he can eat his little lump of hard food, drink a pint or so of water and sleep without hunger or indigestion. The food is not unpalatable in its raw state; and I know from practical experience, that it will sustain life as well without ever having seen the fire or pot.

I know that you will agree with me, that neither the soldier nor the traveler should seek comfort or luxury in the field; these he may have at home, where they belong.

Believe me, my dear sir, sincerely your friend,

I. I. HAYES, Surgeon U. S. Vols.

Dr. SALISBURY, Girard House, Philadelphia.

Here we have a practical test of this desiccated food in campaigning, showing that it sustains the strength of the system admirably, and protects it perfectly against scorbutic maladies—the constant and dreaded scourge of armies—which have more to do in weakening and decimating them than the necessary accidents of battles, combined with all other diseases. It is a remarkable fact, that at present, over twenty per cent. of the rank and file in every campaign of any extent are found on the sick list from bowel and other derangements arising from

defective alimentation. The officers are, for the most part, exempt from these diseases, for the simple reason that they are able to carry food and means for cooking, and consequently have that variety of aliments the system requires for healthy alimentation, and to nourish and sustain it under the fatigues and hardships of the march. This is a matter which should have the earnest and careful consideration of those in authority.

RESUME.

The following is a brief summary of many of the interesting and important results arrived at in this inquiry :

1. Vegetable food, and especially that of an amylaceous and leguminous character, when too exclusively and continuously used, produces constipation, and fermentative and scorbutic conditions.

2. These conditions show themselves in the following abnormal states : The formation of fibrinous masses (emboli) in the capillary vessels of sensitive, irritated and irritable parts, resulting in congestions, inflammations, diarrhoea, paralytic tendencies, loss of voice and diseases of the eye and ear, with pains and aches in the extremities and back ; and also a disposition to cell development, from which result tubercular depositions in the lungs.

3. The abnormal conditions excited by an amylaceous and leguminous diet, require, as dietetic and remedial means, albuminous animal food, instead of vegetable, with anti-fermentatives for controlling zymotic action. In connection with which are indicated the vegetable acid salts of potassa and iron for promoting the solution of the fibrinous clots and thinning the blood, and promoting intestinal absorption and secretion.

4. These conditions in armies are developed mostly during and immediately following campaigns, when the men are confined too much to an amylaceous diet.

5. The officers who can and do carry a variety of food, with the means of cooking it, are exempt from this class of diseases.

6. The first manifestation of abnormal tendencies, after beginning to feed too exclusively upon amylaceous and saccharine

food, or on any of the products of their fermentation, is *constipation* and *dyspeptic symptoms*.

7. This constipation is soon followed by fermentative changes, and the development of intestinal gases and yeast plants in the food too long delayed in the alimentary canal.

8. That as soon as gases begin to develop in the intestinal canal, yeast plants begin to develop in the alimentary matters to an abnormal extent.

9. That this development of yeast plants is evidence of the inauguration of fermentative changes in the starchy food.

10. That this fermentation and development of yeast plants continue to increase till diarrhetic conditions are produced.

11. That a peculiar, gelatinous, colloid matter—usually in little masses scattered through the feces—shows itself to a greater or less extent as soon as the diarrhoea commences; that generally this (colloid) matter is present in direct proportion to the severity of the disease.

12. That this colloid development is not the cause of the diarrhoea, but merely the consequence of certain saccharine and fermentative conditions of the system, in which state the alimentary canal becomes a proper nidus for its development. As soon as these systemic conditions are overcome, this colloid matter ceases to develop and disappears entirely from the feces. It hence may be regarded as merely the consequence, and not the cause, of certain systemic conditions. Its development appears, however, to act as poison, and increases the intestinal lesions.

13. That the system on the amylaceous diet becomes highly saccharine and fermentative, so that even the mucous secretions often contain sugar, and rapidly pass into fermentative states, developing yeast plants.

14. That this saccharine condition is abnormal, and appears to be a peculiar type of the so-called *scorbutic taint*, and yields more readily to an *albuminous animal diet*, with anti-fermentations and the vegetable acid salts of potassa and iron, than to any other dietetic and remedial means.

15. The fermentative changes in the alimentary canal are

always more active towards evening and during the night, and go on increasing from day to day until

16. Finally the gases and yeast plants developed produce so much intestinal irritation that diarrhoea ensues, which soon becomes chronic, and not at all amenable to the treatment of ordinary diarrhetic conditions.

17. Accompanying the fermentative changes is always a paralytic tendency more or less strongly marked. This is manifested in the alimentary canal, and especially in the large intestines, next in the extremities, the legs prickling and "getting asleep" frequently, with ringing in the ears, and a numb, mixed-up-confused feeling in head, &c.

18. This paralytic tendency appears to arise from defective nutrition and the pressure produced by the clogging up of the capillary vessels with fibrinous masses, from which result serious congestions, &c., as in the intestinal walls, lungs, nerve centres, &c.

19. A cough, with more or less hoarseness, usually sets in, especially during the night and on getting up in the morning, accompanied by the expectoration of a thick, sweetish, cream-colored mucus.

20. This is followed by more or less constriction in breathing, with frequently palpitation of the heart on any excitement.

21. After the diarrhoea sets in, there is usually a remarkable tendency to fibrinous depositions in the heart (thrombosis) and to the clogging up of the pulmonary vessels with fibrinous masses (emboli), with tubercular tendencies and pains and aches in the extremities and back, simulating those of muscular rheumatism.

22. The disease so fatal to animals, known as "hog cholera," is the same abnormal state of the system as the chronic diarrhoea of armies.

23. Both arise from the same cause, viz., the too exclusive feeding upon amylaceous or saccharine food, or upon the products of their fermentation.*

*The diarrhoea is but one expression or symptom, out of many, of the peculiar systemic abnormal conditions excited by such food.

24. One of the primary lesions appears to be the clotting of the blood in the capillary vessels and heart.

25. There is a strong probability that the conditions of the system, which result in diabetes, are similar to those producing chronic diarrhoea, and that the causes are analogous.

26. There is also evidence that the conditions of the system, which result in bronchocele, are similar to those which give rise to chronic diarrhoea.

27. There is strong evidence, also, that the condition of the system which gives rise to summer complaints and fluxes in children, especially those where the stools are gelatinous and green (the so-called colloid matter), are similar to those that result in chronic diarrhoea. They appear to arise from the too exclusive and continued use of starchy and saccharine substances and fruits, which children are largely indulged in.

28. The jelly-like matter of chronic diarrhoea is colloid, and emanates from the epithelial tissues of the alimentary walls.

29. That this colloid matter is not the cause of chronic diarrhoea, but merely the consequence of certain glycogenic conditions of the system, brought on by feeding too exclusively upon amylaceous food; that after it begins to develop in the alimentary canal, it tends to exhaust the system and aggravate the lesions and the disease.

30. That sugar, vinegar, carbonic acid and even alcohol beverages, when too exclusively and continuously used, tend to produce similar conditions of the system with that of amylaceous food.

31. That amylaceous and saccharine matters, with all the products of their fermentation, when too exclusively and continuously used, as food, or taken into the system in any way, result in similar lesions and abnormal conditions, and tend to produce in the heart and large vessels fibrinous depositions, which result in thrombosis and embolism, in congestion and hepatization of the lungs, congestion and inflammation of the intestinal walls, with the damming up of the blood in the capillaries that nourish the

nerve centers and extremities, resulting in paralytic tendencies, with sometimes loss of voice and diseases of the eye and ear.

32. That these make up the great mass of the most obstinate, lingering, pitiful and fatal diseases of the army, decimating it more and bringing upon it and those at home more suffering and grief than the accidents and casualties of battles and all other diseases combined.

33. That if we would prevent these diseases, we must change the present army diet.

34. That the *desiccated beef and vegetables* make an anti-scorbutic, anti-fermentative, highly portable, nutritious and good diet for the soldier, and could be furnished him at a cost not exceeding the present ration.

35. That of this food he can carry thirty days' rations in his haversack more easily than he can five days' rations of his present food.

36. That with this food the heavy and cumbersome commissary trains that so impede an army may be dispensed with.

37. That at present the great bulk and weight of the soldiers' food is water—a heavy and unnecessary ingredient to carry—and which makes up from five to seven pounds in every six to eight, and which he can supply at the numerous springs, brooks and rivers along his march. In the desiccated food this water is taken out and the food compressed into a small bulk, so that he can carry six days' rations of it more easily than one of his present food.

38. That with this desiccated food he need never be without a good substantial diet that will sustain him during the labors and fatigues of the march, and protect him from the numerous dreaded scorbutic and fermentative diseases.

39. That this *desiccated beef and vegetables* have already been submitted to a practical test in campaigning—in Dr. Hayes' Arctic expedition—and found to work admirably as a good nourishing, anti-fermentative and anti-scorbutic food. In Dr. Kane's expedition this food was not used, and his men suffered much from scurvy and frost bites. In Dr. Hayes' expedition, although he reached a more northern point than any previous explorer,

yet he did not have a solitary case of scurvy among his men nor a single frost bite.*

40. That beans and peas have a marked tendency to produce flatulence, indigestion, intestinal derangements, and hence they should be entirely abandoned as army food. The poor of our cities that feed upon the bean and pea soup, provided for them at the public expense, are soon affected, if they live upon this food too exclusively, with diarrhoea, which is often obstinate and protracted.

DESCRIPTION OF PLATES.

Fig. 1. Vegetable cells, each one of which contains either a quadrangular or hexagonal prism of sugar. These masses of cells are often met with in abundance in severe cases of chronic diarrhoea, where the fermentation is active and the system is highly glyco-genic.

Fig. 2. Casts of the glandules of Lieberkuhn. These are met with in abundance in all severe cases of chronic diarrhoea.

Fig. 3. A more highly magnified view of a cast of a single glandule, from one end of which are seen emanating algoid spores.

Figs. 4, 5, 6. Large sacks containing vegetable cells, each one of which has within either a quadrangular or hexagonal prism of sugar.

Fig. 7. Some of these cells which have escaped from the sacks. These are met with in all severe cases.

Fig. 8. Egg of an entozoon.

Figs. 9, 10, 11. Various formed spores of a large species of cryptococcus. These are most frequently met with in the discharges of severe and long-standing cases of chronic diarrhoea.

Fig. 12. A peculiar species of algoid vegetation that often is met with in small quantity in fecal matters.

Figs. 13, 14. *Sarcina ventriculi*, frequently met with in the stools and vomited matters in abundance.

Figs. 15, 16. Peculiar crystalline forms often met with in the fermenting stools.

Figs. 17, 18, 18'. Vegetable sacks filled with cells. These sacks are of various sizes, and contain usually many spores.

Figs. 19, 19'. Fat globules, which usually occur in considerable quantities in the fecal discharges of chronic diarrhoea. They are covered with a thin shell of crystallized stearine and margarine, and radiating from this shell are a multitude of thickly set acicular crystals of the same. These acicular crystals

*Frost bites occur almost always in men laboring under a *scurbutic taint*. Those that are sound are seldom frost bitten.

122 *Defective Alimentation a Primary Cause of Disease.*

resemble the cilia of living organisms, for which these globules might be mistaken

Fig. 20. Smaller fat globules, unaccompanied with crystalline matter.

Fig. 21. A species of gemiasma that was occasionally met with in the passages.

Fig. 22. Gemiasma verdans found in the discharges often in malarial districts.

Fig. 23. Spores of a species of vegetation found in the fermenting fecal matters.

Fig. 24. Spores of a species of penicillium, vegetating in the fermenting fecal matters.

Fig. 25. One of the vegetable sacks represented in 17 and 18 emptied of its contents. These sacks occur often in great numbers in the fecal and colloid matters discharged in chronic diarrhoea and summer complaints.

Figs. 27, 29. Vegetable sacks filled with cells, similar to 17 and 18. These cells are noticed in large numbers at 27.

Figs. 26, 28, 30. Confervoid vegetation that is met with in considerable quantities in the colloid matter of chronic diarrhoea and that vomited from the stomach in certain forms of vegetable dyspepsia. The colloid matters containing this vegetation are usually greenish or yellowish.

Figs. 31, 33. Spores of the cryptococcus cerevisia—yeast plant.

Figs. 32, 35. Spores similar to 31 and 33 of the same species.

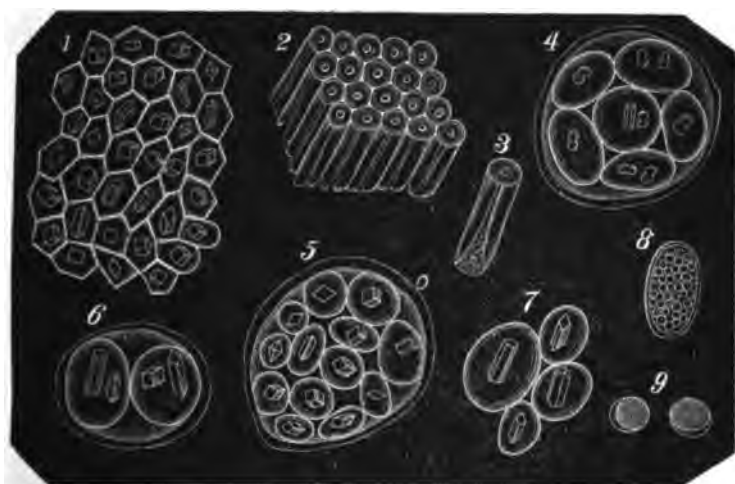
Figs. 36, 37. Spores of an unknown cryptogam.

Fig. 34. Sarcina ventriculi, which is frequently met with in the diarrhoeal discharges in large quantities.

Fig. 39. Gemiasma rufus. Somewhat similar to 21 and 22, and found very often in the fecal matters of malarial districts.

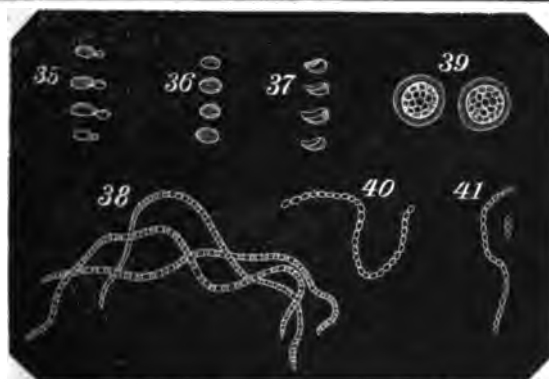
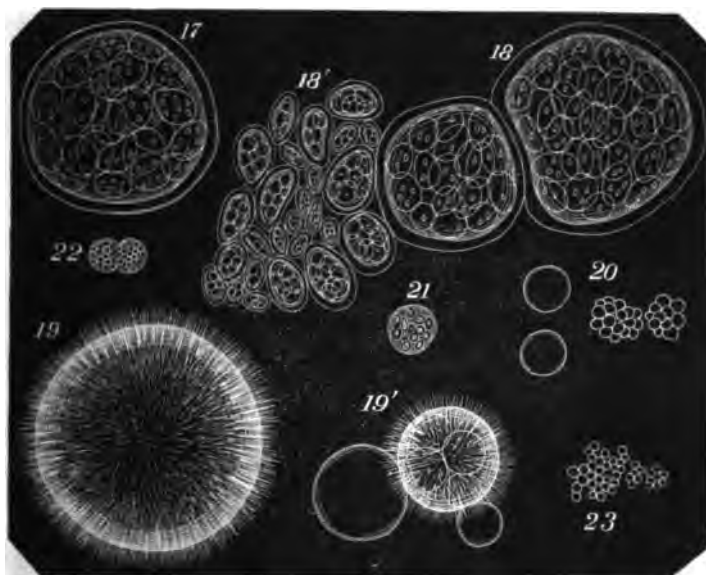
Figs. 38, 40, 41. Two species of algoid vegetation frequently found developing in the fermenting fecal matters of chronic diarrhoea.

PLATE I.



ST. LOUIS MEDICAL REPORTER. VOL. III, No. 4.

PLATE II.



ST. LOUIS MEDICAL REPORTER. VOL. III, No. 4.

COLORLESS TINCTURE OF IODINE.

By HUBERT PRUM, Ph. D., Professor of Practical Pharmacy in the St. Louis College of Pharmacy.

[Communicated for the St. Louis MEDICAL REPORTER.]

Having had frequent calls for a colorless tincture of iodine, and the formula in use presenting decided therapeutic objections, I have devised the one which will be found at the close of this article. There are two formulæ in general use, the first being made as follows :

Iodine	-	-	-	-	-	-	-	3j.
Alcohol	-	-	-	-	-	-	-	f3xij.
Water of ammonia	-	-	-	-	-	-	-	f3iv.

Dissolve the iodine in the alcohol, and add the water of ammonia. Let stand until bleached and filter. The result of this process is the formation of an alcoholic solution of iodide of ammonia, with perhaps some iodate, and contaminated with the presence of caustic ammonia, which prevents the colorization of the product.

It is obvious that the use of this preparation can but be limited, for if we recollect that properly prepared aq. ammonia contains ten per cent. of ammonia, it requires but little forethought to see that there would arise many cases in which though the use of tr. of iodine would be indicated, yet owing to the very caustic nature of this preparation, its employment would be dangerous. The second formula is that of Dr. Percy Boulton, and is made as follows :

R.—Compound tincture of iodine	-	-	46.5 gra.
Liquid carbolic acid	-	-	6 drops.
Glycerine	-	-	3vij+45.5 grs.
Distilled water	-	-	3iv+3v+37.5 "

M.

This formula presents some very valuable therapeutic advantages, combining, as it does, the deobstruent qualities of the iodine with the peculiar antiseptic properties of the carbolic acid, and, no doubt, in practice will fill up a vacuum that has long existed, as there are many instances in which the combi-

nation of iodine and carbolic acid would be peculiarly advantageous.

The objection that can be urged against its use lies in the fact that, to many, especially to women, the intolerable odor of the discoloring agent is as disgusting as is the disfiguring effects of the officinal tr. of iodine, besides which I have not, as yet, met with any sample of carbolate of iodine which is perfectly colorless—they were all more or less of a light yellow hue. It will also be perceived that there is but a small per centage of iodine in each fluid drachm of the preparation, which rather unfits it for external use.

In the formula herewith submitted, the writer, without arrogating to himself much claim to originality, thinks that by the use of his process many of the objections that are urged against the use of the formulæ above presented will be obviated. It is as follows:

<i>R.</i> —Tincture of iodine, U. S. P.	- - - -	f3vj.
Distilled water	- - - -	f3ii.
Hyposulphite of soda	- - - -	108 grs.

Triturate the soda with the water, and add the tr. of iodine gradually, with constant stirring; when the process is completed, filter.

The resulting tincture is a clear and limpid solution, possessing no causticity beyond that naturally pertaining to all alcoholic solutions of iodine; and as far as I have been able to learn from those who have used it, has all the resolvent, absorbent and deobstruent properties that belong to the officinal tincture of iodine.

In conclusion, the writer of this is well aware that the preparation of a colorless tinct. of iodine, which would represent iodine *per se*, without the formation of a new chemical compound is, as yet, a chemical impossibility; but he does claim that as long as the medical profession have to have recourse to combinations of iodine with discoloring agents, the one which will present it the freest from causticity and odor is the best.

THE OBSTETRIC HAND.

The following excellent suggestions from the pen of Dr. Robert Barnes we find in the *Medical Times and Gazette*, and we fully endorse its teachings :

"In ordinary labor the obstetric hand is the only instrument required. It is also the only instrument called for in many of the greatest difficulties. In mal-presentations, in placenta prævia, in many cases of contracted pelvis, in not a few cases where, after perforation, the crochet and craniotomy forceps have failed to deliver, the bare hand affords a safe and ready extrication. One can not help seeing that practice is often determined by the accidental perfection of, or familiarity with, particular instruments. Thus, a man who has only reached that stage of obstetric development which is content with a short forceps, will be armed with a good perforator and crochet. He can not fail to acquire skill and confidence in embryotomy, and greatly to restrict the application of the forceps. Again, the preference generally given on the Continent to cephalotripsy over craniotomy and extraction by the crochet or craniotomy forceps is the result of the great study directed to the perfecting of the cephalotribe. At the present day we may boast of having good and effective instruments of all kinds, each capable of doing excellent work in its own peculiar sphere, and, moreover, endowed with a certain capacity for supplanting its rival instruments. For example, the long forceps to supplant craniotomy in a certain range of cases of minor disproportion. Hence, it follows that it is of more importance to have a good forceps which can save life than it is to have a good perforator and crochet which destroy life. At the same time, it is eminently desirable to possess the most perfect means of bringing a fœtus through a very narrow pelvis, in order to exclude or to minimize the necessity of resorting to the Cæsarian section. Our aim should then be to get the most out of all our instruments—to make each one as good of its kind as possible. And admirable is the perseverance, marvelous and fertile the ingenuity, that have been brought to this task. I will not say it has all been

misdirected; but certainly the cultivation of the hand, the study of what it can do in the way of displacing cold iron, has been much neglected. It would be not less instructive than curious to carry our minds back when the forceps and other instruments now in use were unknown, and to confront the problem which our predecessors, Ambrose Paré, Guillemeau and others had to solve—namely, how to deliver a woman with deformed pelvis without instruments. That they did successfully accomplish in many instances with the unarmed hand that we now do with the aid of various weapons, there can be no doubt. If this implies greater poverty of resources on their part, it not the less implies also greater manual skill. I am confident that the possession of instruments, especially of the craniotomy instruments, has led within the last century to a neglect of a proper use of the hands, which is much to be deplored. We are only now recovering some of the lost skill of our ancestors.”

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

MANUAL OF THE BOTANY OF THE NORTHERN UNITED STATES, &c.—8vo., with twenty plates, illustrating the Sedges, Grasses, Ferns, &c. Fifth edition, 1867. Second issue, March, 1868. By ASA GRAY, M. D., Fisher Professor of Natural History in Harvard University. This is the Manual for the use of Botanists, Teachers and the higher grade of classes.

INTRODUCTION TO STRUCTURAL AND SYSTEMATIC BOTANY AND VEGETABLE PHYSIOLOGY.—(Botanical Text-Book.) 8vo., illustrated with over 1300 cuts. By ASA GRAY, M. D., Fisher Professor of Natural History in Harvard University. This work remains as the more elaborate Text-Book for Structural Botany, Vegetable Anatomy and Physiology, and general outlines of Classification and of the Natural Orders for Colleges, Medical Students, Teachers and for advanced instruction generally, this and the Manual forming the highest course of Botany. Published by Ivison, Phinney, Blake-man & Co., 47 and 49 Greene street, New York.

We are under obligations to the publishers for the above works. Gray's Botanical Text-Books are too well known to require endorsement; they are the standard works on the subject for the United States. They have been adopted as the Text-Books of the St. Louis College of Pharmacy, and should be in the hands of every student of Botany. We would also recommend students of pharmacy and medicines to add the above to their list of studies as especially useful. We append the publishers' notice, which we fully endorse:

“This series of Text-Books presents the latest and most accurate principles and developments of the science, and supplies the

most full, clear and admirable apparatus for the study of botany in schools, academies and colleges ever prepared in this country, furnishing a comprehensive classification and description of all plants known among-us for analysis.

"For comprehensiveness of scope, exactness and clearness of description, accurate and scientific analysis and beauty of illustrations, Professor Gray's books have no equal."

We shall be pleased, also, to notice Dr. A. W. Chapman's new work on the *Flora of the Southern United States* on receipt of same. Messrs. Ivison, Phinney, Blakeman & Co. publish a full line of all kind of school books, and in a style which defies competition.

PLASTICS—A NEW CLASSIFICATION AND A BRIEF EXPOSITION OF PLASTIC SURGERY.—By DAVID PRINCE, M. D. Philadelphia: Lindsay & Blakiston. 1898.

This essay presented now to the public in book form has been already presented, to a certain extent, to the profession, through the transactions of the Illinois State Medical Society in 1867. It deserves to be widely known, as embodying more precision in the classification of the subject than has heretofore been obtained, and as giving more intelligibly to the profession, who do not specialize the subject, that general information so proper to be known. We recommend its perusal and study to all, satisfied that no one will be disappointed. On the contrary, that every one will rise from its examination pleased and informed, even if the reputation of the author did not give it character.

SPERMATORRHEA—ITS CAUSES, SYMPTOMATOLOGY, PATHOLOGY, DIAGNOSIS, PROGNOSIS AND TREATMENT.—By ROBERTS BARTHOLOW, A. M., M. D., Professor of Materia Medica and Therapeutics in the Medical College of Ohio, etc., etc. Second edition. New York: W. Wood & Co. 1897.

This little work can be confidently recommended to student and practitioner as embodying views on a subject at present little or improperly understood—views new to the profession, for hitherto the teachings of Lallemand, whose pathology of the disease was an irritation or inflammation, from whatever cause, of the prostatic portion of the urethra and of the seminal ducts, have been acted on as the sole truth. In the view of our author, the disease is ranked among the nemoses; admitting the influence of eccentric irritation, he considers "it as essentially a

deranged functional state of the cerebro-spinal system." The treatment is a rational consequence of this pathological view, and should be successful, being so in accordance with good sense. The writer has given a thorough exposition of the whole subject, as indicated by the title page, and we doubt not the work will receive, as it justly deserves, a very cordial reception from the profession. Dr. Bartholow will gain much credit by this essay, for he has substituted for much error, which has so long prevailed, the truth, which will henceforth prove a blessing to a class of patients, whose almost sole refuge was in the hands of quacks.

PENNSYLVANIA HOSPITAL REPORTS.—Vol. I. Philadelphia: Lindsay & Blackston. Dedicated to the Medical Profession of the United States.

We welcome this volume as one of a series, from which we hope to derive much pleasure and profit. The Pennsylvania Hospital has been in existence for one hundred and twelve years, and from this age and its size (for the wards will accommodate two hundred and twenty-five patients) there must have naturally accumulated a vast amount of valuable experience, which, through still quite a number of the older physicians and surgeons and a larger number of those of later years, can very readily be given to the profession, indeed should not be allowed to be wasted.

The volume before us is an excellent introduction to the work which is proposed. It commences with a very interesting sketch of the hospital from its foundation, and reminiscences of the physicians and surgeons who have served it, by C. D. Meigs, M. D. This article alone is worth the book, as coming from one who had the opportunity in early life of being in the presence and under the guidance of some of the most distinguished of American physicians, such as Rush and Physick.

There is the merit of great variety among the rest of the articles which fill the work. Medicine and surgery are well illustrated by some of the best medical minds in the country. To enumerate those essays is beyond our space; we can only say that they are all valuable, and all refer to the practicalities of every day life. We wish we could take up the various articles and give at least a synopsis, but we must rely on the future for opportunities to give to our readers something from those pages rich in medical information. Let every physician possess himself of the work; it is at least becoming, as emanating from the oldest hospital in the land.

The execution of the book is admirable, the typography fine, and the paper of the best kind.

MEDICAL REPORTER.

ST. LOUIS, APRIL 15, 1868.

The Missouri State Medical Association.—We call the attention once more of the profession, more particularly of this State, to the meeting of the Association in St. Louis, on Tuesday, April 21st, 1868. We hope all the various local medical societies will be represented; and if the delegates from the interior do but manifest the same interest as at the re-organization of the Association last December, we shall look forward to the re-union as fraught with good results to the profession in this State. We hear of many excellent essays that have been prepared for the meeting, and we are glad to find that the general feeling is to pursue the legitimate objects of the Association—the advancement of medical science—by actual observation and a thorough intercommunication of ideas. The preliminaries of the organization have paved the way for a paramount result. The effort to induce the legislature, at its last session, to specially interfere in behalf of the profession, relieving it of the incubus of quackery, has thus far not succeeded; indeed, the appeal from the Association has been placed among the business which was unfinished, and we may as well conclude that in that direction it is finished, and refrain from any further seeking outside influence to accomplish that which belongs to ourselves alone, and in which we alone can succeed. Let us talk, therefore, no more about special legislation for the benefit of the profession, but go to work with a will at the specialties which every individual physician has before him in his daily practice, confident in this manner of keeping out of harm's way, if that be harm which consists in mixing ourselves up with all the absurdities and knaveries of the day.

We hope that the Association will economize its time by directly acting upon the reports of the committees on the essays that may be presented; by this way alone can it hope to arrive at any positive results—the desultory debates arising upon the questions of the moment fatigue and exhaust till, ultimately, the

body succumbs. But we have little fear of this; there are too many prominent intellects among the physicians of this State to permit such an inglorious termination; we have too much at stake to risk such a mishap. Missouri must now stand forth, as in other things, so in the prominent estimation in which she holds her medical profession, a profession which has purity and strength enough to repel all contamination from the bad influences which always have and always will surround it.

The Indiana State Medical Society.—The annual meeting of the Indiana State Medical Society will be held at Indianapolis, beginning on Tuesday, May 19, 1868. All letters and papers should be directed to Dr. L. D. Waterman, Secretary, Indianapolis.

The Nineteenth Annual Meeting of the American Medical Association will be held in the city of Washington, on Tuesday, May 5, 1868, at 11 o'clock A. M. The various committees are expected to report at as early a day as possible.

Secretaries of all medical organizations are requested to forward lists of their delegates, as soon as elected, to the Permanent Secretary, Dr. W. B. Atkinson, Philadelphia.

At the Annual Commencements of Medical Colleges for the spring of 1868, there were at the Massachusetts Medical College, 48 graduates; Medical Department Harvard University, 26; Bellevue Hospital Medical College, New York, 111; College of Physicians and Surgeons, New York, 104; Medical Department New York University, 82; Buffalo Medical College, 40; Jefferson Medical College, Philadelphia, 159; Medical Department University of Pennsylvania, 158; Rush Medical College, Chicago, 116; Chicago Medical College, 48; Cincinnati College of Medicine and Sur-

gery, 10; Medical College of Ohio, 54; Miami Medical College, Cincinnati, 39; Cleveland Hospital Medical College, 27; Medical Department University, Louisville, Ky., 46; Medical Department University, Nashville, Tenn., 85; Medical Department University of Louisiana, New Orleans, 46; New Orleans School of Medicine, 28; Medical College of South Carolina, 27; Toland Medical College, San Francisco, Cal., 18; Medical Department University of Michigan, Ann Arbor, 76; Missouri Medical College, 26; St. Louis Medical College, 46. Total, 1,400 graduates. There have been at other medical colleges, not in the above list, about one hundred additional, making in all some fifteen hundred graduates in medicine for the spring of 1868.

The Quarterly Journal of Psychological Medicine and Medical Jurisprudence, for April, 1868, has been issued. The contents of this number are unusually interesting, and it will be found a valuable acquisition to medical and legal gentlemen.

Fougera's Iodinized Cod Liver Oil.—We see in the *Medical Gazette* that, during the past autumn and winter, a trial was made at the out-door department of Bellevue Hospital of the Iodinized Cod Liver Oil, prepared by Mr. Fougera, of William street, with the view to ascertain whether or not this oil possesses any advantages over the ordinary uncombined cod liver oils. The advantages claimed for Mr. Fougera's Cod Liver Oil are, that by reason of the addition of iodine, bromine and phosphorus it is more efficacious, and at the same time the stomach need not be disordered by an excessive amount of oil administered. This oil was given to about eighty patients, about thirty of whom were children, the remainder belonging chiefly to the department of chest diseases. No statistical account of the result could well be given; but the opinion of the physicians using it is nearly unanimous to this effect: that the oil is of decided

medicinal value; that, compared with ordinary cod liver oil, it appears to take effect more rapidly; and that it obviates the very common necessity of adding extemporaneously to the oil medicines containing iodine or iron, particularly the syrup of the iodide of iron. In private practice, where the price of the article used is not of much importance, it would be worth while to give this preparation a trial.

VITAL STATISTICS OF ST. LOUIS.

For the month of March, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	181	Still Born.....	46
White Females.....	146	Under five years of age.....	140
Colored Males.....	9	Between five and twenty years...	80
Colored Females.....	9	Between twenty and forty years.	87
Born in the United States.....	264	Between forty and sixty years....	57
Born in Germany.....	66	Between sixty and eighty years...	26
Born in Ireland.....	44	Between eighty and one hundred y'rs	5
Born in other countries.....	17	Total.....	391

DISEASES.

Abscess.....	2	Fever Typhoid.....	18
Apoplexy.....	4	Gastritis.....	6
Asthma.....	3	Hemorrhage.....	1
Bronchitis.....	8	Hepatitis.....	4
Cancer.....	5	Hernia.....	1
Carditis.....	4	Hydrocephalus.....	5
Cerebritis.....	6	Hydrothorax.....	1
Convulsions.....	15	Inflammation.....	3
Congestion of Brain.....	13	Jaundice.....	2
Congestion of Lungs.....	5	Labor.....	2
Croup.....	5	Marasmus.....	17
Debility.....	4	Meningitis.....	10
Dentition.....	3	Nephritis.....	1
Delirium Tremens.....	1	Old Age.....	2
Disease of the Heart.....	5	Paralysis.....	3
Diarrhoea.....	9	Peritonitis.....	5
Diphtheria.....	3	Pneumonia.....	42
Dropsy.....	10	Premature Birth.....	8
Drowned.....	2	Rheumatism.....	2
Dysentery.....	6	Scarlatina.....	8
Eclampsia.....	2	Scrofula.....	4
Enteritis.....	7	Scalds.....	3
Erysipelas.....	2	Syphilis.....	3
Fever Congestive.....	4	Tetanus.....	4
Fever Intermittent.....	7	Trismus.....	6
Fever Remittent.....	5	Wounds.....	2
Fever Puerperal.....	4		

Total number of Deaths for March, 1868.....395

Total number of Deaths for March, 1867.....366

Total number of Deaths for March, 1868.....391

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

VOL. III.

ST. LOUIS, MAY 1, 1868.

No. 5.

A CASE OF OVARIOTOMY, RESULTING IN DEATH.

By JOHN B. BOND, M. D., Duvals Bluff, Ark.

[Communicated for the St. Louis MEDICAL REPORTER.]

Lucy Harria, aged 45 years, called me to see her September 1st, 1867, and directed my attention to a large tumor in the right iliac region. She was much emaciated, and had been constantly confined to bed for two or three weeks.

The tumor was first noticed by her about eight months previously, but had given her no great inconvenience during its growth, until about two months before I saw her, up to which time, and at intervals afterwards, she performed her customary household duties.

The tumor was found to be round and generally elastic; it pointed slightly about two inches to the right of the linea alba, at which place fluctuation could be discovered. At this time the tumor was apparently five inches in diameter. I at once diagnosed it to be a unilocular ovarian cyst. It was then and had been throughout its growth quite movable, falling forward or to either side with corresponding changes of posture. In fact, no attachments could be discerned.

Wishing to be absolutely certain of the diagnosis and the best course to pursue, as well as to relieve present pain, a trochar was introduced at the point of fluctuation, and carefully retained until the cyst was emptied of about twenty ounces of healthy

pus. This gave the patient great relief, but the cyst re-filled in the course of two weeks, and was largely increased in size.

After consulting with several eminent gentlemen, extirpation of the tumor was determined upon, as affording the only chance of life to the patient who was sinking slowly and demanded the operation, after being fully advised of the hazard attending it.

On the eighth day of October, 1867, with the assistance of W. S. Collins, M. D., late U. S. Navy, John S. Williams, M. D., and N. L. Ragland, M. D., late surgeons C. S. A., the operation was performed.

An incision was made five inches long in the linea alba, commencing at the pubic bone, through the integument and muscles, leaving the peritoneum intact until the last, which was then carefully divided on the *director*.

This opening brought the tumor into full view, but was insufficient to permit its extrusion; a T incision was then extended over the tumor, but all efforts to evolve it were, to our surprise and chagrin, unavailing.

The tumor was fully seven inches in diameter; was free from adhesions over the entire surface, except at the posterior portion where it enclosed the aorta and a considerable space of the vertebral column, and restricted all our efforts to detach; after vainly endeavoring for thirty minutes to break up these adhesions, the attempt was abandoned, the contents of the tumor evacuated and the abdominal incisions closed with the interrupted silk suture. The patient was under the influence of chloroform exactly an hour without any bad symptoms from it.

Not over eight ounces of blood were lost during the operation, although the internal epigastric artery was divided in making the T incision.

The patient was put to bed and a full opiate administered—she was nearly as strong as before the operation, and said she felt no pain.

No untoward symptoms appeared until the fourth day, when peritoneal inflammation of a high grade set up, and on the fifth day she died.

The chief interest of this case, to my mind, was the impossi

bility of of ascertaining, *until too late*, the great and insurmountable adhesions which had taken place; which, had they been known, would have utterly precluded the operation for Extirpation. The perfect mobility of the tumor led us to the almost positive conclusion that the pedicle was very small, as it was judged impossible for so large a body to move so freely in the abdominal cavity, unless such was the case.

It is not good logic, I know, to draw general conclusions from a single case. Be that as it may, the writer is satisfied with Ovariectomy under such circumstances, and cheerfully gives his experience for the benefit of the profession, believing that the cases of failure are as important to the profession as the successful ones, and should be as candidly reported.

CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

By J. L. WHIPPLE, M. D.

[Communicated for the St. Louis Medical Reporter.]

About the first of May, 1862, I saw three cases in the same family, of Cerebro Spinal Meningitis; at least so I thought it. The disease was so well-marked in its features as to admit of no doubt, however, as to the diagnosis.

Though not at that time aware of the fact that this disease sometimes exists as an epidemic, and nearly approaches, in many respects, the zymotic disease, I soon felt that I was not dealing with a simple phlegmasia. During the summer I was in attendance upon an aggregate of twenty or more cases, similar, in all essential respects, to the first three cases; and the utter intolerance of blood-letting or depressants, and even of cold to the head, the severity and protracted character of the rigors by which the disease was ushered in, the feeble and imperfect reaction, the early and extreme prostration, sufficed to establish a marked distinction between the disease under treatment, and simple inflammation of the cerebro spinal meninges. The appearance of an eruption and the muscular soreness, tend to assimilate it to the eruptive fevers or zymoses proper.

The patient, in apparently perfect health and without premonition, would be attacked with rigors, extreme in severity and protracted in duration. Re-action, when established, was but partial and feeble in the majority of cases; the face, head and body frequently being hot while the extremities were cold; the pulse was seldom above 100 beats to the minute, until near the close, when it became excessively rapid and contracted in the early stage of the disease, and throughout in those who recovered, it was about 100, full, soft and easily compressible. The surface, at every pore, poured out a profuse and exhausting perspiration throughout the course of the disease. Excessive and persistent pain in the head marked the entire course of the disease. Great irritability of the stomach, with efforts at emesis, was a constant, early and persistent symptom.

Most of the patients, upon the establishment of re-action, became furiously delirious; the delirium, after a time, coming to be of the character peculiar to delirium tremens. Convulsions of epileptic form or tetanic character soon followed, and, in a few cases, preceded re-action. Sometimes with emprostotonos; in others, opisthotonos, and in cases soon to terminate in death, sub-cutaneous extravasation of venous blood occurred. Soon after death, in all of the fatal cases, the superficial veins became enormously distended, and extensive extravasation occurred into the areolar tissues beneath the skin, and conjunctiva seeming to indicate a spasm of the arterial tree, with the paralysis of the venous. I have no doubt but that a post-mortem would have revealed an empty left ventricle, with all or at least most of the arterial trunks in a similar condition.

In cases which were to recover upon the establishment of re-action, a punctate eruption, similar to the first appearance of small pox, was thrown out upon every part of the body, which, in about twenty-four hours assumed all the characteristics of the eruption of measles, from which no one could have distinguished it; at the same time the patients complained of great muscular soreness, as of rheumatism, and patches of an erysipeloid eruption were present upon some parts of the body, followed in some of the cases by acute abscess of the areolar tissues. During

the whole course of the disease, the tongue was, in the majority of the cases, absolutely normal. In a few of the cases it was coated near the middle and base with yellowish brown fur, the edges being clear and red. It was moist in every case seen. The disease was terribly rapid in its fatal results; most frequently terminating within thirty-six hours from seizure, and when the forty-eighth hour was passed safely the prognosis was in favor of an ultimate recovery. Convalescence was unexpectedly rapid in the recovering cases, considering the state of utter prostration in which the patients existed at the termination of the seizure. The most troublesome sequelæ being the abscesses following the erysipeloid eruption. A few of the cases passed into a typhoid state of from three to ten days' duration. More than two-thirds of the cases seen proved rapidly fatal, the patient dying of coma. In a few of the cases, after the delirium had lasted for a few hours in its furious form, it would be replaced by partial sanity, with great agitation and trembling, with icy coldness of the surface; pulse absent at the extremities; excessive thirst; complaint of great heat—a common expression being that they were burning up inside; great anxiety and dread of impending calamity; this state was soon followed by coma, convulsions and death. No treatment seems to have availed much. I believe that the recoveries were more probably owing to the less severity of the disease or greater vitality in the subject. I do not think that much can be claimed for treatment. Various plans of treatment were tried with little difference as to results. The first five cases were treated as phlegmasia, with a result of four deaths; one case not treated at all (but carefully nursed), recovered. In every fatal case quinine was tried. A blister extending from the nucha to the coccyx and about four inches broad, along the spine, I feel persuaded in my own mind, did good. Every case that recovered, with the exception of the one treated in a manner purely tentative, (and which was evidently a mild case) had been thus treated, and all of the cases where this proceeding had been adopted, save two cases seen too late for any treatment to have availed much, recovering; I feel persuaded that

it had something to do with the recoveries. To do good, treatment must be commenced early and followed up promptly. I found the aqua ammonia fortior a very useful and important agent, the system yielding, in most cases, readily to its action. Brisk purgation also seems to do good, and is well borne in this disease. I came, after experience, to prefer for this purpose, the oleum tigllii, on account of its prompt and efficient action. Should I be so unfortunate as again to meet this disease, I should give the elaterium a trial; its drastic hydragogue action peculiarly adapting it to the treatment of this fearful disease. In those rapidly fatal diseases you cannot afford to wait for the slow and uncertain action of ordinary remedies; the above are potent remedies, but the end fully justifies the means.

The administration of medicine in this disease is rendered peculiarly difficult by the furious delirium, convulsions and coma attending its course. Although I feel very much dissatisfied with the result of any plan of treatment which I have as yet seen practiced, I trust that if any one has been more fortunate, he will give it publicity at once, for I am authentically informed of its present existence in this State, and it may at any day burst forth with appalling violence.

HOSPITAL REPORTS.

CLINIC OF PROFESSOR E. H. GREGORY, AT ST. LOUIS (SISTERS') HOSPITAL.

[Reported for the St. Louis Medical Reporter, by THOS. FOX, M. D.]

CASE 1.—*Fracture of Skull.*—Edward Bulger, aged 28 years, a patient in Professor Gregory's ward, was brought before the class, having a depressed fracture of the skull in the region of the posterior superior angle of the left parietal bone; the result of a blow from a slung-shot, received on December 14th. No symptoms of compression followed until about the 20th day from the reception of the injury, when symptoms of coma began to be manifest. On the 22d day the bone over the point of fracture was exposed by an incision. Several fragments of

bone were found lying loose upon the dura mater; some were driven through into the substance of the brain; one large fragment was driven in between the dura mater and the firm portion of the bone. All loose fragments of bone were removed. The symptoms of coma passed immediately off and the patient has now entirely recovered.

CASE 2.—*Aneurism by Anastomosis.*—A child, one year old, was brought before the class by Professor Hodgen, having an aneurism by anastomosis upon the right side, above the hip, extending a few lines across the median line, which had gradually increased from birth. The same condition existed in a less degree on the same side, upon the hard palate. Needles carrying setons, saturated with solution of the persulphate of iron, were passed through, the setons being left in the track of the needles to excite inflammation and obliterate the vessels. Result favorable.

CASE 3.—*Fracture of the Ulna.*—John Mack, aged 28 years, presented himself at the clinic, having a fracture of the ulna, in an unusual site. It being in the lower third, which was treated by a single splint extending from the fold of the elbow joint to the ends of the fingers. The patient made a rapid and good recovery.

CASE. 4.—*Necrosis of the Ulna.*—A patient, in Professor Gregory's ward, was operated upon before the class for necrosis of the ulna, the result of a gun-shot injury received thirteen weeks previously. A charge of buck-shot passing through the forearm at various points, one of which lodged in the triangular portion of the ulna, beneath the anconeus muscle. This was extracted, and several portions of dead bone removed from the middle portion of the ulna. The recovery was favorable.

A SIMPLE METHOD OF TREATING FRACTURES OF THE LEG.

During the clinic hour, while applying a starched bandage to a case of recently united fracture, Professor Gregory called the attention of the class to a simple appliance for the treatment of fractures of the leg, which is frequently used in this (Sisters') Hospital. It consists of a wide piece of cloth, two pads and

splinters of the proper length. The splints are rolled within the cloth from without, towards each other, until the proper width is attained. The limb is placed within the box, so formed, and the pads placed in their proper position. Two pieces of bandage are passed beneath and tied in front; the upper one should be tied first, the limb placed in its proper line, and the lower one made fast, and the whole laid upon a pillow. The advantages of this appliance are that the necessary materials are nearly always at hand. The rapidity with which it can be applied, the readiness of perceiving and correcting any malposition of the fragments without the disturbance caused in removing dressing, as the limb is always exposed to view, the ease of making applications to the part in cases of compound fracture, while the comfort of the patient and the results following its use, compare very favorably with those of more complicated and costly apparatus.

ANCIENT SPECULA, AND THE CONICAL OR CYLINDRICAL
SPECULUM OF THE MODERNS.

BY WILLIAM R. WHITEHEAD, M. D., New York.

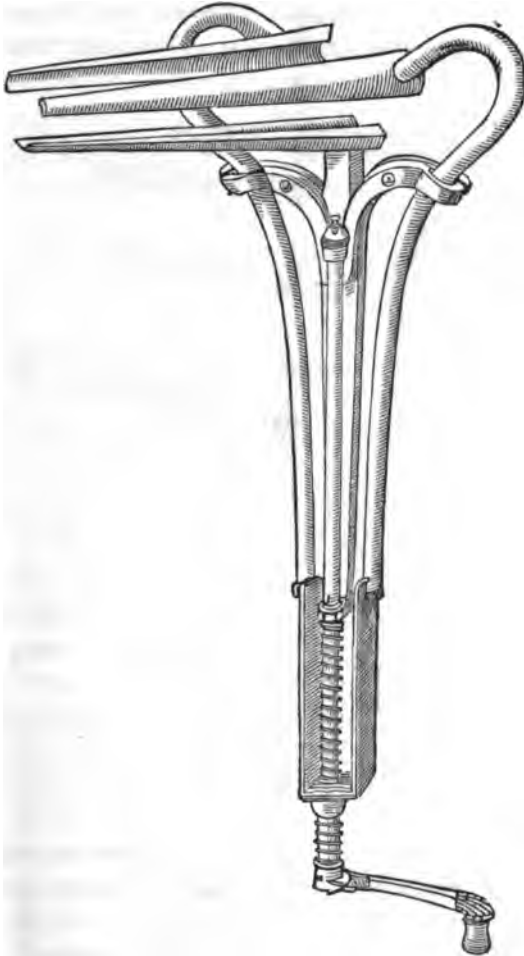
A glance at some of the earliest specula known, may serve to form a proper appreciation of the excellences, or make more apparent the defects, of the modern instruments of this kind; and, at the same time, afford an occasion incidentally to offer a few remarks concerning the usefulness of the common round glass speculum.

In briefly alluding to some of the ancient specula, I propose to exhibit by wood cuts representations of two, which, from their remote origin and ingenuity of conception, are eminently deserving of notice.

Paul of Ægina, during the seventh century, was known for his knowledge and successful treatment of diseases peculiar to women, and described the speculum vaginæ under different names. Fabricius (ab Aquapendente), who wrote at a much later period, and was contemporary with Franco, held Paul in such high esteem as to rank him with Celsus; and it is proba-

able that the speculum attributed to Fabricius was either the same used by Paul, or suggested by his writings. Rhazis, in the tenth century, and Albucassis, in the eleventh century, described the speculum vaginæ, as did Paul of Ægina, under the

FIG. 1.

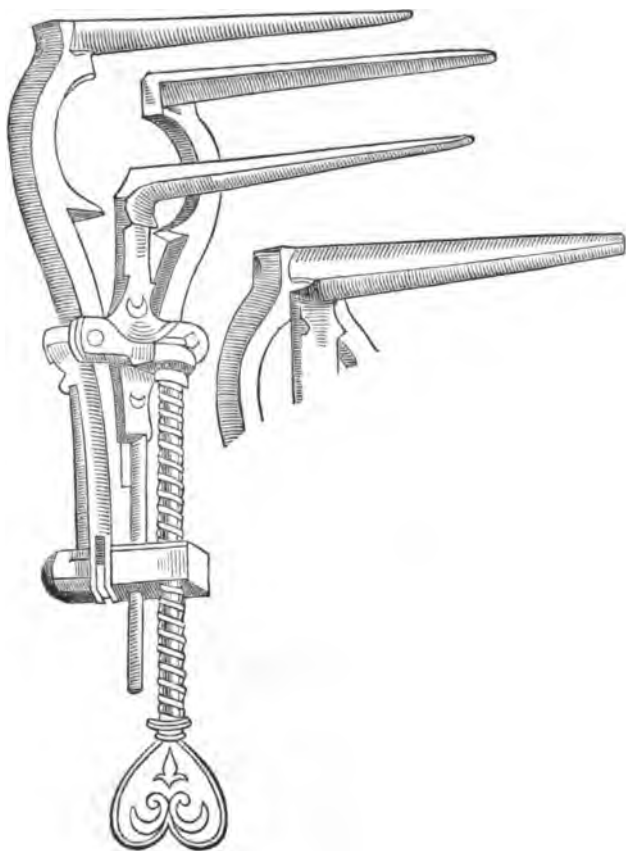


SPECULUM VAGINÆ, USED BY FRANCO, MORE THAN THREE CENTURIES AGO.

names *DIOPTRA*, *TORCULUM VOLVENS*, etc. Several centuries later, *Franco*, *Pare*, *Scultet* and others adopted the word *Speculum*, which is now the one generally used.

FIG. 1 represents the *speculum vaginæ* used by *Franco*, and which has been exactly copied from that surgeon's work. The instrument is sufficiently well exhibited to permit, by careful inspection of the drawing, to dispense with an explanation. FIG. 2 shows that used by *Ambroise Pare*, and which may be

FIG. 2.



SPECULUM USED BY AMBROISE PARE.

seen in his work at page 997. The branches of this instrument were of the length of eight or nine fingers breadth; or proportioned to the age and size of the woman. These instruments were not essentially different from those found in the ruins at Herculaneum. They were somewhat similar to that of Paracelsus, in use during the early part of the sixteenth century, and were not very unlike that of Fabricius ab Aquapendente. The instrument of Fabricius, however, had a cumbrous mechanism, with a right and left screw to move its three valves.

It is probable that Guilleméau, and afterward Mauriceau, Peu and Viardel, were familiar with the speculum used by Paré; especially Guilleméau, the pupil of Paré, and the translator of his works into Latin.

The speculum vaginæ gradually fell into disuse, however, to be again revived during the first half of the present century, as it had been revived during the times of Franco and Pare.

Récamier, who gave a new impulsion to the use of the speculum, preferred a simple conical tube of polished metal to the more complicated instruments of anterior date. Dupuytren modified Récamier's instrument by causing it to be made shorter and having a handle added to it, which addition was not generally considered an improvement.

Madame Boivin recognized the inconvenience attending the relative narrowness of the vulva orifice of the vagina, when it became necessary to dilate the upper part of this canal. Her speculum, however, failed to obviate this inconvenience; and in dilating the superior portion of the vagina, the branches of the instrument were as equally expanded at the vulva as at that portion, and pressed painfully on those parts it was not intended or desirable to dilate too much. Jobert conceived the idea of dilating the uterine portion of the vagina by means of a speculum, which should correspondingly diminish in calibre, at the vulva, as the distal extremity of the instrument expanded. His speculum was composed of two segments of an articulated cylinder hinged together not very far from their uterine extremity. Ricord modified the speculum of Jobert by causing the hinge to

be placed near the vulva extremity, and by the addition of handles the manipulation of the instrument was made more convenient. The branches of this bivalve speculum dilated the vagina in its lateral portions, and permitted of operations on either the anterior or posterior vaginal septum; and this instrument was, until the introduction of Sims' speculum, the one generally used in Europe for vesico-vaginal fistula, or for operations on the cervix uteri. Jobert's speculum has undergone various modifications by the addition of valves or other attachments, which, in some instances, have increased, and in others impaired its usefulness.

The names of many physicians, at present favorably known in the treatment of uterine diseases, are each associated with a speculum of peculiar shape. I am of the impression that each and all of these instruments have served very well in the hands of their originators; and have proved to be useful means of exploration with those who have acquired skill in their use. It is not my intention, neither my desire, to comment upon the relative merits of any of these instruments, but to express succinctly certain preferences in favor of the common round speculum as a usual means of exploration, which opinion I think justified; and, while I desire to uphold the usefulness of this simple and inexpensive instrument, I wish to be thought fully to appreciate the superior advantages of others where this is unsuitable. Moreover, having, in certain cases, experienced the want of a suitable instrument for the proper exploration of the female organs of generation, I have viewed with pleasure all attempts to attain this object. The glass cylindrical speculum, bevelled off at the inner end, coated with tin foil, and covered with india rubber, is a very portable and simple instrument, of facile use; and which, I believe, will meet the most frequent necessities of the general practitioner. Exceptionally, however, this speculum cannot serve the purposes of exploration, or be used for the most important surgical operations practiced in the vagina and uterus. But such operations do not form the major part of the treatment of womb diseases; and when complex operative procedures on the utero-vaginal region are required, other specula

must supersede the cylindrical speculum. Difficult operations on this region are assigned to the dextrous hands of those possessing a special acquaintance with the subject; and, as the result shows, each one seems to have his particular speculum. The cylindrical speculum, as is well known, may be introduced very conveniently with the patient on the left side or on the back, and if required, under cover. The beveled edge of the instrument is introduced between the labia and parallel to them; the perineal commissure is gently pressed by a slightly rotating movement, and the vaginal sphincter being passed, the speculum enters without difficulty. The cervix, if not abnormally enlarged or too much displaced, will enter the field of the instrument. Sometimes this will not occur, but the amplitude of the upper part of the vagina may permit, without injury to the cervix, a slight rotating movement of the instrument, which will end in discovering the cervix, either ante or retro-flexed. The end of Sims' flexible metallic uterine probe, hooked into the cervical canal, may, without too much pain, cause the cervix to enter the speculum. If the cervix is too much displaced, the sound can not be introduced through the speculum, but should be passed along the finger, previously inserted into the vagina. The difficulty, of which some speak, of not being able to use the flexible sound through the cylindrical speculum, I have been usually fortunate enough to obviate by first shaping the sound to correspond to such a curve as a previous digital and bi-manual exploration may have discovered, at the first examination of the patient, to be necessary. The end of the sound being passed through the speculum and inserted into the cervical canal, a certain lateral movement is imparted to the speculum if the patient be on the side, and a depressing or elevating movement if on the back; and these movements should correspond to those of the sound held with the right hand. This kind of manipulation, with the proper curve to the probe, will frequently be sufficient to permit of a thorough examination of the uterine cavity by means of this instrument. When this cannot be done, the patient placed on her side or on her breast and knees, Sims' speculum being introduced and

properly held, the cervix may be dragged down with a slender tenaculum and the uterine probe introduced. Recently, at the Northwestern Dispensary, with the Women's Department of which I am connected, not having Sims' speculum with me, I made use of an old disused tongue depressor to examine and manipulate a prolapsed and partially, but badly inverted uterus. The house physician, Dr. Clark, kindly held the instrument for me while I attempted ineffectually to reduce the inversion, which was firm and immovable, resisting the pressure of the index fingers. I could not have desired a better view of the parts than I obtained with this improvised speculum. No other instrument could have enabled me better to manipulate; but I was compelled to desist, and inserting into the vagina a large cotton plug, saturated with glycerine, sent the patient home to remain quietly in bed, to wait the good results of rest, position, and the soothing effects of the glycerine, to reduce the congestion of the parts. The cylindrical or conical speculum is very convenient for making various applications to the cervix, or to the interior or cervical canal; for leeching the neck of the womb, or for local depletion by scarifications of this part. Sponge tents may, with facility, be inserted into the canal of the cervix through this speculum; which may also be advantageously used for fastening a pair of spring forceps to the protruding end of the tent previous to its removal and after the withdrawal of the speculum.

By scarifications of the cervix, made through the cylindrical speculum, from half an ounce to an ounce of blood may be withdrawn and removed by means of the well known long-pipe rubber syringe. If desired, the flow of blood may be still further increased by injecting warm water into the speculum.

In conclusion, it is proper to add, that this instrument can nearly always be conveniently held by the patient, thus dispensing with an aid.—*New York Medical Journal.*

LECTURE ON THE TREATMENT OF PNEUMONIA.

Dr. A. T. H. Waters, in a Clinical Lecture delivered at the Liverpool Northern Hospital, and reported in the *British Medical Journal*, very truly remarked that no single line of practice will, in his opinion, ever be found applicable to all cases of pneumonia. In the treatment of each case, you must have regard, not simply to the amount of lung involved, or the stage which the disease has reached, but also, and more especially, to the constitutional condition of the patient, the frequency and character of the pulse and the antecedent circumstances, as far as you are able to ascertain them.

"You will have observed," Dr. Waters said, "that the treatment which I adopt is not characterized by the exhibition of large doses of any of the so-called antiphlogistic remedies; that I never withhold nourishment from the patients when they can take it; and that I do not resort to powerful purgatives. On the other hand, you must have noticed that in many cases I prescribe stimulants at an early period of the disease.

"Let me say a few words with reference to blood-letting. In the series of cases which I have tabulated, I have never resorted to venesection, and only occasionally, and that in the earlier numbers of the series, to cupping or leeching. I believe there are few cases now met with which are benefited by general bleeding; and that the abstraction of blood by the cupping-glasses or leeches is not often necessary. No doubt this local bleeding often gives great relief; but I think we can generally afford equal relief by the use of other measures.

"I fear I must tell you that I do not believe we possess any single remedy which is specially and specifically curative of pneumonia; but at the same time I believe we do possess certain agents which, by their general effects on the system, exert a decided influence in the disease.

"An agent which has been vaunted and very largely used in pneumonia, is tartar emetic. It is a remedy which you will see me prescribe occasionally; and of its value in some cases I do

not entertain any doubt. There are many cases, however, in which antimony must not be given at all, cases which are marked from the outset by a weak and rapid pulse, and in which it is plainly manifest that there is a want of constitutional power. Again, with regard to this remedy, there are few cases, I believe, which require, or are benefited by, a prolonged administration of it: nay, I think that I may say that there are few cases that are not injured by such a practice; and wherever the drug produces a decidedly depressing effect, wherever it gives rise to sickness or purging, I believe it does harm, and should not be persevered with. In promoting perspiration, it seems often to give great relief; and further, it appears to have a beneficial influence on the pulmonary membrane, in rendering the secretion less viscid, and in facilitating expectoration. It is rarely, if ever, necessary to give it in large doses. From one-sixteenth to one-fourth of a grain I have usually found quite enough. At the same time there can be no doubt that large doses—one or two grains—may be safely given in some cases and continued even for days, without producing any of the so-called physiological effects of the drug—purging, vomiting, &c.; and in such cases the antimony appears to do good; the symptoms of the pneumonia yield during its administration, and convalescence becomes established. But, whilst these full doses of tartar emetic are well borne by some patients, I doubt much whether it is ever desirable to exhibit them; for I believe we can get all the good effects which the drug is capable of affording by using it in smaller quantities. Of late I have treated the cases which I thought would be benefited by antimony, with small doses of the remedy; but in some of the earlier cases referred to in the table, half-grain and grain doses were given.

“The propriety or impropriety of administering alcohol in pneumonia is one of the most important questions in connection with the treatment of the disease. Here, again, we find that no fixed or definite rule can be laid down. Whether stimulants shall be given in large quantities or small quantities, or be withheld altogether, must be decided by the general features of each case, and not simply by the fact that pneumonia exists.

There can be no doubt that many cases of pneumonia may be conducted to a satisfactory issue without the administration of a single drop of alcoholic stimulant: further, that there are cases in which alcohol aggravates the symptoms, increases the distress and retards convalescence. At the same time there exist other cases which are as decidedly benefited by stimulants, and in which they should form the main therapeutic agent to be relied on. I may here remark, that in a large proportion of the cases which have come under my care, both in hospital and private practice, I have given, apparently with decided advantage, a larger or smaller quantity of some form of alcohol, either wine or brandy, in the earlier stages of the disease.

"With regard to calomel, I have seen it given, and have had opportunities of watching its effects; but in my own practice I think I have not given it more than three or four times. In the series of cases referred to in the table it was given once only; and I have little doubt that the progress of recovery was in no wise hastened by its administration.

"The exhibition of opium is, I think, very desirable in many cases. It often relieves the pain, allays the distressing cough which sometimes exists, and procures sleep. I found that the pain in the side which so frequently accompanies pneumonia, and for which I used formerly to prescribe cupping or leeches, may be generally relieved by the administration of a dose of opium.

"There are some other remedies which are frequently given in inflammatory affections of the lungs, about which I would like to say a few words. Among these is ipecacuanha, which, I think, is advantageously administered in some cases of pneumonia. It sometimes nauseates and prevents the patient from taking nourishment, and in this respect may become prejudicial. In such cases it ought to be omitted. It is not a remedy you must trust to in any severe case of the disease; but as an expectorant and diaphoretic it may occasionally be of some service.

"Carbonate of ammonia and chloric ether—spirits of chloroform of the *Pharmacopœia*—are substances which I often prescribe in combination in pneumonia. They are both stimulants, and, when given together, seem often to have a beneficial effect.

When I think a case will not be improved by small doses of antimony, I generally prescribe ammonia and chloric ether, either with or without alcoholic stimulants.

"With regard to the administration of salines, such as citrate of potash or acetate of ammonia, I do not, as a rule, prescribe them either in this or in any other inflammatory affection. I think it doubtful whether the routine practice of constantly administering these substances in inflammation is a desirable one. At the same time there can be no doubt that they are sometimes agreeable to the patient, and afford relief to the distressing thirst which is at times present. Further, by supplying water and certain constituents to the blood, they may promote the action of the skin, as well as of other excreting organs, and thus have a curative effect. At the same time, I would remark, in referring to the action of the skin, that it by no means follows that the existence of the hot, burning, dry skin, so frequently met with in pneumonia, necessarily indicates the use of salines or antimony, or any other of the so-called diaphoretic medicines. This condition is sometimes rapidly relieved by the sole administration of some form of alcohol; and, in fact, wine or brandy will occasionally be found the best diaphoretic we can use.

"The administration of nourishment forms an important element in the treatment of this, as of all other acute affections. In the early stages of a severe attack, there is but little desire for food: and there is a risk, if the mere feelings of the patient are alone consulted, that nourishment may be withheld too long. It is not desirable to starve a patient even during the acute stage of the disease; but small quantities of such nourishment as can be taken, excluding solid food, may be safely allowed. There is necessarily a great waste going on during the attack; and, unless this is to a certain extent supplied by food, there will follow great prostration, which will seriously endanger the patient's safety when the acute symptoms have subsided. For the most part, in the early stages, the quantity of food given may be safely left to the desire of the patient. As the case progresses and the appetite begins to improve, the

diet should be more liberal; and you will find that as soon as convalescence is established, solid food will be borne. In such cases as require a very early and free administration of alcohol, nourishment should be given liberally from the first. Beef-tea and milk are usually well borne, and if the former be properly made, a good deal of nourishment may be got in by means of it.

"Let me say a few words with regard to the practice of counter-irritation in the treatment of this disease. At the commencement of the attack, and in its early stages, turpentine fomentation, or mustard poultices, followed by linseed-meal poultices, seem to act beneficially; but later in the disease, when consolidation has taken place, blisters are, I think, of more value. I believe they produce a really curative effect on the diseased bloodvessels; that, in fact, they cause contraction of the capillaries by reflex action of the vaso-motor nerves. They appear also to be useful in promoting absorption of the effused matters. Large linseed-meal poultices may be applied to the chest; but I do not think they are as valuable in this disease as in bronchitis, in which they often afford great relief."

HOW TO PREVENT PITTING OF THE FACE BY SMALLPOX IN PERSONS UNPROTECTED BY VACCINATION.

After earnest consideration of the question as to the best means to be adopted to prevent pitting, after reviewing the different applications which have been recommended for this purpose, Dr. Charles Black, of London, determined, from his knowledge of the influence of light on the growth and development of both plants and animals, and of the destructive action of oxygen on diseased tissues, to exclude both these agents from the face of a patient that came under his care a short time since. He, therefore, shut out the light from her apartment by additional blinds of a dark color to the windows, and he guarded the face from the action of the oxygen by keeping it constantly covered with fresh hog's lard. So effectually was the daylight excluded that the light of a candle had to be employed when anything important required to be done in the room. During this time

ventilation was strictly attended to. The disease ran the ordinary course, and when desiccation, which was rapid, had been completed, he had the satisfaction of seeing that no pitting of the face had occurred, it clearing off free from indentations or pits of any kind, and regaining fully its natural appearance in due time.

In Dr. Black's second case, the eruption was confluent on the face, and semi-confluent on the body. The mucous membrane of the mouth and nostrils was similarly affected. From the first moment of the appearance of the eruption until desiccation was partly completed, the patient was kept in *perfect darkness*, with the face constantly besmeared with lard. As soon as the pustules had acuminated, they did not, as is usual, burst; but they shriveled, as it were, at once into yellowish-brown scabs, which fell off in two or three days, leaving the face *without a single pit*. No secondary fever occurred.

Dr. Black's third case of unprotected smallpox occurred in a female child of one of the families above named. She was six years old, of delicate constitution, weak and puny in development, and on her mother's side, hereditarily predisposed to pulmonary consumption. The attack was severe from the outset; the eruption confluent on the face and mucous surface of the mouth, and confluent to a great extent over the body. Dr. Black endeavored to impress on the minds of the parents the absolute necessity of keeping the patient in *perfect darkness*, and the face well smeared with lard. To these particulars they themselves attended; but not unfrequently a servant was placed for a time in charge of the sick-room, and whenever such was the case, the blind of one of the windows, which was close to the bed of the patient, was invariably half drawn up, so that a certain quantity of light fell directly upon the patient. In vain did Dr. Black forbid this, for so surely as the maid took charge of the patient as certainly did she pull up the window-blind, probably more for her own convenience than the gratification of the child. The case progressed favorably; no secondary fever followed; convalescence was soon established; and after desiccation had been

completed, there was left on the face a few shallow pits, which could be seen only on close inspection.

Very shortly after the recovery of this case, a little brother, seven years old, sickened, passed through a severe initiatory stage, and had a confluent eruption. He, too, had not been vaccinated. Warned by the previous case, the room was in this instance kept perfectly dark, from the appearance of the eruption until desiccation had in a great measure been completed. Although the face was so covered by the eruption that a free space, however small, could not be found; although the head and face were greatly swollen and the eyes closed for several days; and notwithstanding that the mucous surface of the mouth, throat and nostrils suffered in like manner, yet in this, as in the second case, as soon as the pustules had acuminated, they shriveled at once into scabs, which quickly fell off and left the face *without a single pit*. In this case, too, no secondary fever occurred.

Before this boy had left his bed, a sister, four years old, and a brother, three years old, were attacked. They also were unprotected by vaccination. The symptoms in both were severe; but especially so in the boy, in whom the eruption was more generally confluent than in any case which Dr. Black has yet seen during the present epidemic. The face was one mass of eruption, and, in the vesicular stage, so coherent were the vesicles on the sides of the nose, that they formed large blisters. Such, too, was the condition of the soles of the feet, whilst the surface of the rest of the body was so occupied by the eruption that a free space could scarcely be found. The eruption on the face of the girl was semi-confluent, but distinct on the remainder of the body. Both patients occupied separate beds in the same room, which was kept perfectly dark during the necessary period. Lard was freely applied to the faces of both, but especially to that of the boy, who, during the rising of the pock, frequently rubbed his face with his hands. Dr. Black was afraid that this interference would produce pitting, but such was not the case. Both patients made an uninterrupted recovery; there

was no secondary fever, and not the slightest pitting of either countenance occurred.

The medical treatment pursued in each of the above cases consisted in administering from one to two drachms of the solution of acetate of ammonia, with two or three drops of the solution of arsenite of potash, every second or third hour from the commencement of the initiatory stage to the acumination of the pustules, from which period to the completion of the stage of desiccation the dilute nitric acid, in doses of three to five drops, was substituted for the acetate of ammonia only. The diet consisted chiefly of milk and light farinaceous food, with cooling drinks during the earlier stage of the disease; and of these, with the addition of beef-tea, chicken-broth and similar food as the maturation of the pustules progressed. In but one instance was recourse had to any alcoholic stimulant, and that was in the case of the first patient, who was allowed a small quantity of wine during convalescence.—*London Lancet.*

AN ADDRESS ON THE PRESENT STATE OF THERAPEUTICS.

Delivered at the Opening Meeting of the Clinical Society of London by SIR THOMAS WATSON, BART., M. D.

I am very sensible of the great honor which you have done me in electing me the first President of the Clinical Society. Reluctant as I not unusually am to assume at my time of life any fresh duties or obligations, I yet must confess that I have extreme satisfaction and pleasure in accepting at your hands this new office; for the Society which we are founding to-night seems to me well calculated gradually to bring about that which, in my judgment, is the thing most needful at present among us. I mean more exactness of knowledge, and therefore more direct and intelligent purpose and more successful aim in what is really the end and object of all our labors—the application of remedies for the cure or relief of disease. Certainly the greatest gap in the science of medicine is to be found in its final and supreme stage—the stage of therapeutics. The anatomy of the human body is sufficiently well known. Its material pathology,

also, under the auspices especially of a sister society, has been, I will not say completely, yet very amply and fruitfully ransacked by the diligent scrutiny and study of the dismal but instructive revelations of the dead house. I say its *material* pathology, for the condition of doctrinal pathology must necessarily partake of whatever imperfection may be found in the correlative science of physiology. Again, we have attained to a great degree of certainty in the detection and discrimination of disease in the living body. We know tolerably well *what* it is that we have to deal with, but we do not know so well, nor anything like so well, *how* to deal with it. This is more true, no doubt, in the province of the physician than in that of the surgeon, but is lamentably true in both provinces. We want to learn distinctly what is the action of drugs, and of other outward influences upon the bodily organs and functions—for every one, now-a-days, I suppose, acknowledges that it is only by controlling or directing the natural forces of the body that we can reasonably hope to govern or guide its diseased actions. To me it has been a life long wonder how vaguely, how ignorantly, how rashly drugs are often prescribed. We try this and, not succeeding, we try that, and, baffled again, we try something else; and it is fortunate if we do no harm in these our tryings. Now this random and hap-hazard practice, whenever and by whomsoever adopted, is both dangerous in itself and and discreditable to medicine as a science. Our profession is continually fluctuating on a sea of doubts about questions of the gravest importance. Of this the evidence is plentiful and constant. Let me substantiate what I am now saying by one or two glaring instances. The old, and, as might have been hoped, obsolete controversy between the Cullenian and the Brunonian schools has been revived in all its former extravagance within our own time. Many of us can recollect when blood-letting was reckoned the *summum remedium* against all forms of inflammatory disorder—which were to be starved out also by the strict enforcement of what was called the anti-phlogistic regimen. Now there are, I believe, many who yet hold that to deprive a patient of an ounce of his blood is to sap his strength and to aggravate his danger, and that for all ailments

brandy is the grand and easy panacea. One generation extols mercury as the sole and unfailing remedy for syphilis; the next attributes 'all the worst evils that follow in the train of that hateful disorder to the very mineral which had been administered for its cure. Even now, at this present time, a hot contention of most weighty import fills the air around us, upon the question whether, when cholera is present in the community, we should treat the diarrhœa, presumed to be the prelude or commencement of cholera, by opium and astringents to check the discharges from the bowels, or by castor oil to promote them.

I say this uncertainty, this unseemly variation and instability of opinions, is a standing reproach to the calling we profess. It has shaken the faith of many men, of men both able and thoughtful, and driven them to ask themselves whether any kind of medication, other than the *vis medicatrix naturæ*, is of any real efficacy or value. Well, this is one of the questions which it will be competent for the Clinical Society to settle.

In order to clear the ground for correct observation, and in order to the avoidance of fallacies in observing, it is most desirable, when it can be done without harm or known hazard to the sick, to learn respecting all distinct and recognized forms of disease, what would be their course, what their tendencies, what their results, if left to themselves and subjected to no kind of remedial treatment whatever; to ascertain, in a word, what it has become the fashion to speak of as the *natural history* of disease. For this purpose, again, the Clinical Society may be expected to furnish help. Truly, there are diseases in which it seems to be our main business to stand by and look on; to see that nature has fair play; that the patient has the requisite advantages of rest and warmth and pure air and appropriate food, and no more; to watch his recovery, not to attempt his cure. Probably all the specific fevers that run a definite course are of this kind. Medicine needs to step in only to redress some untoward deviation from that regular course, or to facilitate and fortify the natural recuperative efforts. But there is a legion of other disorders for which rest and warmth and a pure atmos-

phere and a well adjusted diet are *not* sufficient. There are cures as well as recoveries; and there are remedies that are equal to the cure. Still, of therapeutics, as a trustworthy science, it is certain that we have as yet only the expectation. The influence of drugs upon the bodily conditions of health and disease is, indeed, most real and most precious to us. And some of them, in our contests with disease, we have learned to wield with much confidence and success. Who can doubt the efficacy of opium and of anæsthetic vapors in blunting the sensibilities of the body, and so quelling the pain? No one questions the marvelous power of quinine to stop the malarious fevers and other periodic complaints, or of the iodide of potassium to eliminate from the body, apparently by first dissolving them, certain poisonous or hurtful elements. The rough yet sanative effects of emetic and purgative drugs are notorious to all. But there is a host of other known or reputed remedial substances—to say nothing of a further host, no doubt, hitherto unthought of and unessayed—about which our practical knowledge is very loose, imperfect or even misleading. Concerning the peculiar virtue and specific agency of each and all of these, present and to come, we want sound and multiplied experience. There is no other way. The required knowledge must needs be gathered empirically, and by many hands. And while there are many drugs and medicaments yet unproven, there are also many shapes of disease of which the true nature and origin are still disputed or doubtful. Of all these matters will this Clinical Society—if I rightly apprehend its scope and purpose—take cognizance. Full and faithful descriptions brought before it by competent and accurate observers, of the symptoms, circumstances and progress of disease in the living body, and of its behavior under treatment by medicines prescribed with singleness and simplicity, and a definite aim and object, or sometimes it may be, of its behavior under no treatment at all—authentic reports of trials with medical substances upon the healthy human body—contributions of this order, multiplied in number, compared together, contrasted, sifted, and discussed by a variety of keen and instructed minds, of minds skeptical in the best and true

sense of that word, must lead at length, tardily perhaps, but surely, to a better ascertainment of the rules—peradventure, to the discovery even of the laws—by which our practice should be guided; and so bring up the therapeutic and crowning department of medicine to a nearer level with those other parts which are strictly ministerial and subservient to this. And I think I do not entertain an extravagant expectation of the results of the formation of this Society when I express my belief that, if wisely and strictly managed, it will hereafter be spoken of as the starting point of a vast and solid improvement in that which is our special office in the world—the scientific and intelligent exercise of the divine art of healing.—*London Lancet.*

A CARBOLISED SPONGE TENT.

Robert Ellis, Esq., surgeon to the Chelsea and Belgrave Dispensary, after adverting to the serious inconveniences and occasional danger incident to the use of the common sponge tents, proceeds to describe a new kind introduced by himself under the name of carbolised sponge tent. In this invention sponge is still retained as the dilating agent, but the tent is prepared by a peculiar process, which renders it incapable of putrefaction without diminishing its value as a dilator. This is accomplished by introducing into the core of the tent several threads of cotton wick steeped in carbolic acid; and after the sponge is rolled into its proper shape, it is then immersed in cocoa butter, to which a certain quantity of glacial carbolic acid is added. The disinfectant properties of this agent completely protect the tents, and they are withdrawn in an inodorous state even after a stay of twelve or eighteen hours in the cervical canal. The shape and size of these sponge tents also differ from the ordinary kind, which are both clumsy and dangerous, as well as disgusting, in their use. These are spindle-shaped, and thus accurately adapt themselves to the fusiform character of the canal which they are intended to dilate. They require no support when *in situ*, but, by virtue of the immediate fusion of the enveloping material, they take to their work immediately, and are firmly kept in

position. The author stated that he had a large experience of their utility and value.

Mr. Ellis also exhibited an introducer for sponge tents. This instrument consists simply of a slender uterine sound tapered to a fine point, which is thrust up into the tent. A short distance from its extremity a small flat metal collar is attached, on which the sponge tent rests, so as to be firmly supported while it is pressed into its place.—*London Lancet*.

REVIEWS AND BIBLIOGRAPHICAL NOTICE S.

THE DIAGNOSIS, PATHOLOGY AND TREATMENT OF DISEASES OF WOMEN, INCLUDING THE DIAGNOSIS OF PREGNANCY. By GRAILY HEWITT, M.D., London, F. R. C. P., Professor of Midwifery and Diseases of Women, University College. First American from the second London edition, revised and enlarged, with 116 illustrations. Philadelphia: Lindsay & Blakiston. 1888.

This work on the diseases of women, by Graily Hewitt, a name which has constantly appeared before the medical public, in connection with this subject this number of years past, must, from its great merit, have forced itself upon the attention of physicians, and particularly those whose studies have been led in the same direction. Its greatest value, probably, is in the urgency with which the author insists upon diagnosis as the way, above all, which is to lead to a clear idea of diseases in females. The first part of the work, therefore—nearly half the volume—is devoted to this first, under an arrangement comparatively new, when the whole field is explored under the sections: "Data obtained without physical examination and by physical examination." In this part we have what goes to make up very many books on the subject; only the information is given with much more precision, and consequent benefit to the student. The second part of the work is devoted to the pathology and treatment. The pathology is more of a feature in the second than in the first edition, and, considered in conjunction with the treatment, though more or less of it has been referred to in the first part, we have as complete a work as can well be desired. The author has been very fair in giving due consideration and respect to the opinions of others, differing from his own, and in this the confidence of the reader is now strongly drawn towards

him, for it is evident that Dr. Hewitt is seeking solely the advance of knowledge. We cannot too warmly recommend the work. The typographical execution is excellent; the publishers not hesitating to use the best of paper and the clearest of type. The wood-cuts, some entirely new, are superior and an ornament to the book.

ATLAS OF VENEREAL DISEASES. By A. CULLERIER, Surgeon to the Hospital Du Midi, etc. Translated with notes and additions, by F. J. BUMSTEAD, M. D., with 150 colored figures. Complete in five parts. Philadelphia: Henry C. Lea. 1868.

We have received, through the courtesy of the publisher, parts first and second of this magnificent work.

In part first are given, as an introduction, the history of venereal diseases, the questions thoroughly elaborated of the evidence, the contagion, the evolution, the inheritance and pathological anatomy of the disease. The first chapter commences with the subject of blennorrhagia in man, and in this and the second chapter, on blennorrhagia in woman, we have a most thorough exposition of this disease in all its simple and complicated forms. Chapter third treats of vegetations, which are considered as having no relationship with constitutional syphilis, by belief of most writers on the subject.

Dr. Bumstead, as translator, has interspersed the text with his own notes, not hesitating to express a difference of opinion where necessary, as frequently happens, when we know that Dr. Cullerier is a unitist and Dr. Bumstead an inolist, in reference to the cause of syphilis. This, however, does not detract from the merit and interest of the work; on the other hand, it is a source of satisfaction to compare the observations with the conclusions of two men who have studied so carefully and accurately the disease.

The two parts thus published are illustrated by plates, than which none superior have been issued from the press; in fact, in this country, no more magnificent work has ever been published. Infinite credit is due the publisher and translator that they should have placed before the profession, in such a style, so valuable a production.

MEDICAL REPORTER.

ST. LOUIS, MAY 1, 1868.

Missouri State Medical Association.—The first annual meeting of this body was held at the Polytechnic Institute, commencing Tuesday, April 21st, 1868, at 12 o'clock M. The attendance was very good, but principally of physicians from the city; but few of the country members of the profession responding to the call. Dr. Morris, of Bridgton, was called to the chair, the President, Dr. Wood, of Kansas City, not being present. After organization, Dr. E. Montgomery, President of the St. Louis Medical Society, delivered the address of welcome, which was an able and very interesting effort. After which the Committee on Credentials reported some sixty delegates and members present. The committee appointed to memorialize the State Legislature, relative to the standard of medical qualifications of practicing physicians, made a report through their chairman.

The association then resolved itself into a convention, for the purpose of the re-organization of the association, Dr. Morris being chosen chairman. A committee was then appointed to draft a constitution and by-laws for the State Medical Association.

Dr. M. A. Pallen read a paper relative to criminal abortions. Dr. Hammer also made some remarks on the results of amputations in his practice, after which the convention adjourned until Wednesday morning, at 10 o'clock A. M.

The convention re-assembled Wednesday, at 10 o'clock A. M. The Committee on Constitution and By-Laws then made a report, which was adopted. The convention then adjourned, and the association, as re-organized, was called to order and duly constituted. The Committee on Medical Education made a report which was adopted. Dr. G. Hurt read a paper on Medical Education. Dr. G. M. B. Maughs read an important and interesting paper on the diseases of females in the last quarter of a century. Dr. W. B. Outten read a very interesting paper on the relationship existing between scrofulous and mental disorders,

and Dr. J. Green read a paper on obstructions of the lachrymal duct. Several other papers were also presented.

The following were elected delegates to the National Medical Association, to be held in Washington City, on May 5th, 1868:

Drs. J. B. Johnson, E. S. Lemoine, J. M. Scott, T. Kennard, W. M. N. Russell, J. L. Whipple, W. B. Outten, G. Hurt, E. Coleman, E. B. Forsee and F. D. Smith.

Committees were appointed on Medical Education, Ethics, &c. There was considerable discussion on the much vexed subject of Medical Education, with the usual indefinite results. Dr. Clark presented specimens of his apparatus for suspending arms and legs, and also for fractures of the olecranon and surgical neck of the humerus. Dr. Hodgen presented his splint for suspending fractured arms and legs. Dr. Vaughn, of this city, presented specimens of his artificial legs, all of which were examined by the members of the association, and were approved as useful contrivances for the purposes and uses claimed for them. After some desultory discussion, the Association adjourned to meet in St. Louis on the fourth Tuesday in April, 1869.

As was stated above, the members were mostly from the city, and the meeting was more the action of our local profession than an expression of opinion for the State; but it is a beginning, and we trust that by another year an interest may be aroused throughout the State, by which a better country representation may be secured, for without such an attendance, the objects of the association will prove a failure, and be of no importance as a State body. We suppose that the proceedings will be published and distributed, and thus bring the matter before those most interested. We are pleased to see that the subject of special legislation on medical matters was disposed of, and trust that hereafter the time of the body may be occupied with profitable and instructive discussions on strictly medical subjects, and the reading of papers of medical and scientific interest, for by these means only can the Association be useful or interesting to the medical man and general practitioner.

Obituary.—Died, at St. Louis, Mo., on the 28th day of February, 1868, Dr. Thomas Yelverton Banister, a native of Amelia county, Virginia.

Dr. Banister was engaged in St. Louis in practice, if we rightly recollect, from the year 1849. He was always a devoted member of the profession, and for the number of years that he practiced, scarcely left the city. No physician was probably more widely or better or more favorably known in our midst. He was an excellent practitioner, and in his manners, so genial and sympathetic, few there were whom he did not attract and bind to himself, and compel a friendship which remained unbroken. Although he did not appear frequently in the public matters of the profession, his interest therein was none the less active. He preferred the quiet and unobtrusive performances of his duties, satisfied if his example, which he ever tried to make perfect, should have an influence on those with whom he came in contact.

Peace to his ashes; may his memory be ever green among us, who have all so highly esteemed and respected him.

(Richmond Medical Journal.)—We see that (Dr. E. S. Gaillard, editor and proprietor of THE RICHMOND MEDICAL JOURNAL, Virginia, having resigned the Professorship of General Pathology, and Pathological Anatomy in the Medical College of Virginia, and, ~~having~~ ^{that} accepted a similar "professorship in the Kentucky School of Medicine, ~~the~~ ^{that} journal mentioned will, hereafter, be published at Louisville, Kentucky, The title of the journal will be "THE RICHMOND AND LOUISVILLE MEDICAL JOURNAL.") All communications should be addressed to E. S. Gaillard, M. D., locked box 29, Louisville Kentucky.

We have received from Professor Joseph Jones, of Nashville, Tennessee, an elaborate article on the *Phenomenon of Mortification*, which we shall publish in our next number. The known

ability of Professor Jones as an investigator in the field of medical sciences is a sufficient guarantee of the value of his article. We also take pleasure in stating that the Professor has placed several other valuable papers at our disposal, for all of which we return our thanks, and shall lay them before our readers as soon as possible.

Primm & Marthaler, Apothecaries and Pharmacutists, corner Washington Avenue and Sixth street.—We cheerfully call the attention of our friends to the above firm. We have been acquainted with both members of the house for many years, and can, from personal knowledge, recommend them as reliable and competent druggists. Mr. Primm is Professor of Practical Pharmacy, in the St. Louis College of Pharmacy, and is necessarily posted in all the details of his profession. Mr. Marthaler has been the assistant for some fifteen years of Mr. Eugene L. Massoit, (so long and favorably known as one of our most eminent pharmacutists). We trust the success of the firm will be equal to their most sanguine expectations, and extend them our best wishes.

A Curious Case.—Mr. Kelley exhibited, in the London Pathological Society, a short time ago, a specimen consisting of two kidneys, both of which were found on the right side, none being on the left. They were situated one above the other, the one belonging on the right side being uppermost.

Cinnabar of a beautiful vermilion color is found in an unusual form in Idaho, being abundantly spread throughout a gangue so massive, compact and homogenous that specimens may be cut and polished like marble.

T H E

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No. 6

OBSERVATIONS UPON THE METHOD OF INVESTIGATION AND CLASSIFICATION OF THE PHENOMENA OF MORTIFICATION.

By JOSEPH JONES, M. D., Professor of Physiology and Pathology in the Medical Department of the University of Nashville, Tennessee.

[Communicated for the St. Louis Medical Reporter.]

The classification of the varieties of mortification should be based upon the knowledge of the causes producing the degeneration and death of the tissues or organs, and of the nature and relations of the physical, chemical and nutritive changes of the affected tissues in health and during the different stages of disease and mortification, and upon the knowledge of the effects of these changes, and their organic products upon the surrounding tissues and upon the vegetable and animal functions.

The correct comprehension of the complicated phenomena of gangrene includes a knowledge of, first, the physical and chemical constitution and physiological functions of the tissue, structure or organ involved; the physical and chemical constitution, and relations of the blood circulating through the affected part; and the relations of the tissue, structure or organ to the respiration and circulation, and to the cerebro-spinal and sympathetic nervous systems.

2. The condition of the general system at the time of the appearance of the symptoms of mortification.

It is well established that certain modes of life, and certain

substances taken as food, induce such a state of the system as is favorable to the origin of gangrenous inflammation upon the reception of trivial injuries, or they may even induce mortification without any local injury. In such cases we need something more than a mere description of symptoms, and of the progressive appearances of the gangrenous parts; and we can not claim a thorough knowledge of the phenomena until we understand the changes of nutrition during the progressive degeneration of parts. This subject is involved in numerous and great, if not insurmountable, difficulties. In most cases of gangrene it is difficult if not impossible to determine the point at which the tissues commence to degenerate, and even after it has been well established that the nutritive and vital functions are defective, it is almost impossible to distinguish between degeneration and death. Thus, a part may degenerate to death, whilst the surrounding tissues, although greatly degenerated and altered, may still present signs of life, and neither be cast off nor absorbed; so, also, whilst a certain diminution of arterial blood may lead only to deranged nutrition and degeneration, a greater diminution may lead to death; and a certain degree of inflammatory action has always a defective nutrition, and consequent degeneration, whilst in an increase of the inflammation, the death of the same part may ensue.

3. The nature of the causes producing gangrene: if mechanical, the nature and extent of the injury; if chemical, the properties of the substance, and its actions upon and chemical and physical relations with the living tissues; if a mineral, vegetable, or animal poison, its chemical affinities and relations, not merely to the tissues or organs involved, but to the circulatory, respiratory and nervous systems, and to the vegetable and animal functions.

4. The chemical constitution of the various products formed at the different stages of the mortification, and the effects of these organic compounds upon the constitution of the blood, upon the nutrition of the surrounding tissues and of the system generally, and upon the actions of the circulatory, respiratory and nervous systems.

The organic compounds formed during the putrefaction of animal matters removed from the living body, must, without doubt, differ in chemical constitution and physiological action from those formed during mortification in the living body. Putrefaction under these different conditions must necessarily yield different products, from the differences of temperature, and the presence of surrounding living tissues and fluids in the one case, and their absence in the other. In like manner the products formed will vary with the different varieties of mortification.

When inflamed parts, with a large amount of exudation, pass into mortification, from a loss of vitality, or from the obstruction of the circulation, caused by the exudation, or from both causes combined, the products formed during the death and decay of the moist distended tissues will differ from those formed when the parts undergo little or no inflammation, and simply die, shrivel up, and become black, as in *senile gangrene*.

The rapidity of the putrefaction of organic substances is in general in proportion to the degree of the temperature, and the supplies of oxygen and water. The character of the compounds formed will vary with the manner in which these essential conditions are fulfilled.

If the supply of oxygen be deficient, an excess of carbon and carbonaceous compounds will be found in the dead mass, which otherwise would have been transformed and removed, chiefly in the form of carbonic acid gas. Some of these compounds, formed under peculiar circumstances, both without and within the living body, are capable of acting the part of ferments, and of exciting decomposition in neighboring masses. We can in this manner find an explanation of the rapid and progressive destruction of the surrounding tissues in hospital gangrene, *cancrum oris*, *nema*, and some other malignant forms of mortification.

The extent to which the general system will suffer from the infection of the dead matter and poisonous compounds will depend in great measure upon the condition and the constitution of the surrounding tissues. When the constitution is robust and the vascular system well developed and active, with rich, healthy

blood, active inflammation is excited around the dead part, and an effusion of coagulable lymph surrounds and limits the local disease, and tends to protect the general system from infection. In these cases in which mortification is thus circumscribed, the predominant symptoms will be these of inflammation and inflammatory fever, but if the constitution be previously enfeebled and the blood be defective in its constitution and vital properties, or if the forces be secondarily depressed, and the nutrition impaired and the blood deteriorated during the progress of the inflammatory fever, the general system will suffer from the absorption of the poisonous compounds.

The absorption of the poisonous animal matters will be announced by the increased feebleness and frequency of the pulse, the pallor and duskiness of the complexion, the distressed, anxious countenance, with collapsed, pinched features, cold sweats, the dry or clammy brown coated tongue, restlessness and agitation, low muttering delirium, hiccup, fetid diarrhoea, coma or syncope, and death. The rapidity with which the products of mortification will be absorbed and affect the system depends not only upon the condition of the blood and forces, and of the general constitution, but also upon the organ or tissue involved, the absorption being as a general rule most rapid and deleterious in its effects when the dead part is in the interior of the body, in some vital organ, and surrounded by an extensive vascular web work.

5. The relations of the different stages of mortification to the different stages of other diseased actions: as the stages of inflammation and fever.

6. The process by which nature limits or arrests the destructive progress of mortification.

It is evident that the thorough investigation of the relations of mortification here pointed out would not only necessitate immense labor, but also the discovery and invention of methods of experiment, and of tests and apparatus unknown to pathological science.

The varieties of mortification may be arranged under the following heads:.

1. *Mortification Arising from Mechanical Injuries, and the Local Action of Physical and Chemical Agents.*—As severe mechanical injury, great heat, or powerful chemical agents, may kill the structures and contained blood at once, without any preceding inflammation, we are justified in classing this as the most simple and uncomplicated form of mortification.

When, however, these agents are applied in small measure they may fail to cause mortification directly, but may excite an inflammation which, added to the damage that the part has sustained, may result in an indirect or secondary mortification.

This first division may be sub-divided into mortifications resulting from—

- A. Mechanical injury of bloodvessels.
- B. Mechanical injury of nerves.
- C. Mechanical injury of all the structures.
- D. Effects of heat.
- E. Effects of cold.
- F. Effects of destructive corrosive chemical agents: as the mineral acids, &c.

The extent and character of the mortification arising from mechanical injuries, and the local action of physical and chemical agents, will depend not merely upon the nature of the injury, but, in a large degree, upon the condition of the constitution.

Thus, slight injuries, not sufficient to excite gangrenous inflammation in healthy persons, will be attended with extensive and even fatal mortification in habitual drunkards, and in the enfeebled, depressed state of the system, often found in old age, and after long continued fever. The rapid destruction of tissues in parts exposed to pressure (bed sores) following fevers of a low type, appears to be due to the depressed state of the forces and to imperfect nutrition, as well as to the action of morbid agents.

An excess or deficiency of blood, as well as variations in the constitution and relative proportions of the constituents of this fluid, will influence the extent and character of the inflammation and mortification following local injuries.

Although mortification arising from the action of mechanical

and physical causes may at first appear to be strictly local, at the same time the constitution, even in the most simple and favorable cases, is more or less involved. Thus, if the life of a large portion of the tissues in the middle of a leg be destroyed by a grape shot, which fractures the bone, divides the arteries, or renders them incapable of carrying on a sufficient circulation of the tissues which they supply, mortification may take place in the injured tissues or in the foot, imperfectly supplied with blood, immediately; or there may be first an inflammatory action established in the parts above and around the injured tissues, and at the same time an imperfect mortification of the phenomena of inflammation in the foot. As soon as inflammation is established in any part, either in the parts in and around the wound, or in the foot imperfectly supplied with blood, the action of the circulation and respiration is increased, the chemical changes become more active, the temperature of the entire body is elevated, the appetite fails, the urine becomes high colored, the nervous system manifests signs of sympathetic derangement, and the constitution is involved. After the parts pass into the gangrenous state various abnormal organic products result from their decomposition, which, entering into the circulation, disorganize the blood, derange the nutrition of the surrounding parts and of the body generally, depress and derange the actions of the circulatory and nervous systems, and still farther aggravate the constitutional systems.

2. *Mortification Arising from and following Inflammations of Important Organs and Structures, without any External Injury.*—The extent and character of this variety of mortification will manifestly depend, in great measure, upon the functions of the organs or structures inflamed, as well as upon the causes, character and extent of the inflammation.

The causes of the irritation and inflammation of internal organs are various, as changes of temperature, derangements of the circulation, derangements of the nutrition, resulting from bad diet, impaired digestion, improper habits, exposure, the depressing effects of moisture, heat and cold, and from derangements of the physical and chemical properties of the blood,

nervous derangements, imperfect elimination of excretory substances, as uric acid and other noxious compounds, resulting from the imperfect action of the skin and kidneys, and the action of various morbid agents introduced from without or generated within the system upon the organs directly or through the blood and nervous system.

In inflammations, when a very large amount of blood plasma is thrown out, the capillaries are ruptured, the blood, with its red corpuscles, is mixed with the exuded liquor sanguinis, and the exudation thus formed compresses the parts, paralyzes the nerves, obstructs the blood-vessels, and arrests the circulation; whether such products of inflammation with the injured tissues will pass into mortification will depend upon the extent to which the powers of the general system have been prostrated, and upon the extent to which the circulation and nutrition of the parts have been deranged. If the vital powers are too much depressed to organize the exudation into living cells, or are incapable of the slow removal of the products of inflammation by absorption, the physical and chemical forces are no longer directed by the vital force to the constant destruction and repair of the structures, and a new set of chemical changes are set up, resulting in mortification; the constituents of the blood are altered in their physical and chemical properties, the blood corpuscles assume a dark purple and blood color, and finally break down and disintegrate, the tissues of the part enter into the general change, the fat and fibrous cellular and muscular tissues are detached and finally decomposed into amorphous granular masses, and various deleterious and offensive gases, as sulphuretted hydrogen and compounds of ammonia, with many organic compounds are formed.

Whilst in this manner inflammation may terminate in gangrene, we should not regard the various results of inflammation, as adhesion, exudation, suppuration and absorption, as connected with mortification, or as forming necessary steps leading to gangrene. We may have mortification without any of the intermediate stages of inflammation, as in the case of the action of certain animal poisons, as the poison of the rattlesnake, which

produces almost instant death of the blood and tissues into which it is injected. Nevertheless, we can not understand mortification following inflammation without considering the preceding process, with its various products; for inflammation, however produced, may cause mortification from the complete suspension of the circulation of the parts, resulting from the congestion and stagnation of the blood, or from the pressure of the inflammatory products, or from inflammation of the internal coats of the artery; from the derangement and depression of the powers of the general system as well as of the part especially involved by the exhausting effects of the preceding inflammatory fever, and from the degeneration of the blood and tissues dependent upon the defective nutrition consequent upon the inflammatory actions.

The death of an inflamed part, therefore, is a highly complex matter.

8. *Mortification Arising from Constitutional Derangements, and Alterations in the Circulatory Apparatus without any Local Injury or Internal Inflammation.*—Under this head may be classed mortification arising from—

A. Derangements in the quantity, composition and circulation of the blood: as in scurvy.

B. Deficient and perverted nutrition: as in the mortification of the feet and toes, described by Percival Pott, which he affirmed to be unlike the mortification from inflammation, from external cold, from ligature, or bandage, or from that which proceeds from any known and visible cause.

C. Decay of the powers, feeble action of the heart, and structural alterations of the circulatory apparatus, resulting from deficient and perverted nutrition: as in senile gangrene.

D. Deficient and perverted nutrition, and feeble forces and altered blood, resulting from the prolonged action of disease, and especially of fever.

4. *Mortification Arising from the Action of Special Poisons, either Developed within the System or Introduced from without, through the Alimentary Canal, Respiratory System or Skin, or*

through the Blood, or through Wounds and Ulcers.—Under this head may be classed mortifications arising from—

A. The action of various mineral bodies: as arsenic and mercury.

B. Vegetable poisons: as in the gangrene, produced by spurred rye, (gangrenous ergotism, necrosis ustalaginia, sauvages, gangrene des Solognois.)

C. Poisonous animal secretions: as the poison of the rattlesnake (*crotalus adamanteus* and *durissus*), and of the copper-head (*trygeno-cephalus contortrix*), and of the European viper and other reptiles.

D. Fever poisons: as in certain forms of typhus fever.

E. Deleterious agents generated in animals in a state of disease: as in malignant pustule (pustule maligne, charbon, milks-brand.)

F. Poisonous compounds generated during the decomposition of dead animal matters: as in dissecting wounds.

G. Poisonous decomposing animal matters formed in the gangrenous wounds of living men, capable of infecting the system either through the lungs or through the surface of wounds and ulcers.

To this last variety belongs hospital gangrene (*phagedena gangrenosa*.) The previous condition of the constitution will be especially influential upon the course and results of gangrene, arising from the action of the products of animal decay. This might be supported by numerous facts, as the comparative immunity of American medical students from poisoning in dissecting wounds during the early part of the course of lectures, when their systems are in vigorous health; and the more frequent occurrence of poisoned wounds in the latter portion of the course, after their forces have been exhausted, digestion impaired, and blood impoverished by want of exercise, excessive application, poor diet, and the foul atmosphere of the dissecting room, and of the crowded and badly ventilated lecture rooms.

During the recent American civil war, previous exposure, bad diet, crowding and foul air, were effective not only in the origin, but also in the spread and character of hospital gangrene amongst the soldiers in hospital and prison.

DISEASES OF THE FEMALE URETHRA AND BLADDER.

By DR. J. BRAXTON HICKS, F. R. S., Physician Accoucheur at Guy's Hospital.

It is well known to all practitioners of much experience that the reflex tenesmus of the rectum produced by a fissured anus is often mistaken for uterine forcing; so, likewise, irritation of the urethra often produces a bearing down of the uterus, and sometimes even prolapsus. Whenever, therefore, a case of much tenesmus comes before you do not content yourself with the patient's diagnosis, but inquire into its commencement, and its original seat. Some difficulty will, doubtless, present itself to you in seeking this point, because many patients forget, in the trouble of the moment, the exact mode of its commencement; and this is particularly true if the pain have changed its seat. And you will also find, even at the moment of your inquiry, a difficulty of distinguishing, from the sensations described, the precise spot of annoyance; whether, for instance, the pain be in the urethra, or vagina, or uterus; whether, also, the bleeding which occurs in some conditions proceed from the vagina or urethra. These points are important, and for their elucidation may require strict investigation by a thorough examination of each of the passages.

I may here also remark that diseases of the bladder and urethra are not so much under the influence of internal remedies as they are of topical, and therefore you will find that I shall lay corresponding stress upon the latter form of treatment. Not but that much can be done by opiates, rest in the horizontal posture, and avoidance of certain beverages, and the correction of any condition of the system which may give rise to irritating urine. But, on the whole, local treatment in the severe forms is much more effective, though in some works treating of this subject you will find that the local remedies are considered too painful to admit of being used, or else they are in great measure passed by, so that the class of cases under consideration has been not so prolific of laurels as many others.

In bringing before you some of the diseases of the female urinary organs, I shall begin from without, and follow the

passages inwards to the bladder, thus avoiding that confusion so often made in describing diseases of those parts, as well as also to take them up in a systematic and orderly manner.

Vascular growths at meatus urinarius.—I shall first call your attention to those generally extremely sensitive red out-growths of membrane of the meatus urinarius, called vascular growths.

You will find them readily, on separating the labia, by their bright red appearance at the meatus, either in the form of a minute polypus, or as a broad-based elevation of the mucous membrane, partly or wholly surrounding it, or passing some distance within. If you touch this, even as lightly as possible, in the majority of cases the patient will suffer the most acute pain; while in some few there will be no very great suffering. The difference depends, I believe, upon whether the sensitive papillæ (Pacchionian bodies) are enlarged or not. The growth in all cases is hypertrophy of the mucous membrane. In some the growth of vascular element is in excess; in some (the majority), the nerve-tissue; in others the basement layer. Now, in those which are most sensitive you can without difficulty find the Pacchionian bodies hypertrophied, and very distinct. If they are removed by the snare, they will be found beautifully injected.

You will easily understand that, if these growths are so sensitive, much suffering is complained of during walking, coitus, micturition, &c. But, generally speaking, the patient very seldom is able distinctly to explain the seat of the distress. Sometimes the pain from micturition continues setting up a forcing and bearing down, with a distress about the vulva; but as a rule, the distress is not at first referred to the "water-passage." You must not therefore expect to be assisted much by the patient herself in the diagnosis. In such cases it is better to examine by sight, where you have any pain and difficulty attending micturition. Perhaps the most marked sign pointing to the urethra which the patient volunteers is, that after the completion of micturition a drop of blood follows; but in many cases this symptom does not occur. When it does, it is important to ascertain whether the blood really comes from the urethra, or

from the uterus; because straining in micturition will sometimes cause a small, and indeed often a large, quantity of blood to flow from a malignant os uteri. The indefiniteness of the patient's description as to the seat of trouble was well illustrated in a young woman of sedentary habits, who had for two years complained of uneasiness in the genitals. She could scarcely describe its nature, or where exactly it was, except that it was in front, and that when she leaned forward it hurt her. As I could make out nothing more from her description, I examined, and found one of these vascular growths at the meatus. It being of a polypus form, I removed it with a wire noose. She called two weeks afterwards to say she had entirely lost the annoyance, and I heard afterwards she had had no return of it.

As an instance of the vagueness and distress to which these growths may indirectly give rise, I may instance the case of a woman about sixty, who came to me complaining of incessant desire to micturate; severe straining; urine highly loaded with pus and mucus. To add to this, she had recently taken spirits of turpentine with a view to cure, and this doubtless had much increased her troubles. However, she told me she had very intense pain upon connection, for her husband still retained much vigor. This, of course, required examination, when I found that she had a large and unusually sensitive vascular growth at the meatus. This in a day or two I removed, directly after which she began to lose the above named symptoms, which in the course of two weeks had passed off, the urine recovering its natural condition. In this case a great amount of the distress was occasioned by reflex irritation, at first set up by the growth, but which she herself had increased.

The treatment of these cases is simple. Where the growth is of the polypus kind, it is best removed by a wire snare—as, for instance, by one which I have described in the “*Obstetric Transactions*.” For myself I prefer this mode because you can thereby secure its total removal, which you can not always if you endeavor to seize it with the forceps and cut it off with scissors; for then not unfrequently the growth, always of a flimsy and vascular character, breaks down, so that it is impos-

sible to lay hold of it again. If we attempt to cut it off with the scissors only, we may be more successful; but I have seen such efforts defeated by the drawing up of the parts at the slightest touch before it can be secured by this instrument. Under these circumstances I have found the most ready mode is that of dividing with the wire noose. Of course we may employ the galvano-cautery; but this apparatus is rather more troublesome to prepare. As a rule, after removal I prefer touching the part with a caustic, such as nitric acid, in the manner described below for the broader-based forms. Little or no bleeding ensues; that which does occur is readily stanching by pressure. In the more sessile forms I prefer the use of nitric acid, as a convenient agent, in the following manner: Take a piece of soft wood, such as deal; nothing is more at command than a lucifer match. After cutting off the inflammable part, and rounding off the corners, this is dipped in nitric acid, and the superfluous quantities allowed to drain off, so that the wood should only be saturated with it. It can then be applied to the growth without any fear of its running over the parts not affected. Nitrate of silver is not to be relied on to destroy the base of the growth. Either the galvano-cautery or nitric acid may be used, so far as I have found, with the greatest amount of certainty.

Now these growths have a decided tendency to return, particularly if the growth has not been thoroughly destroyed or removed in some manner. Therefore in any case it would be well not to promise a radical cure too decidedly. I have seen a girl in whom the whole meatus was surrounded by a growth of considerable exuberance, and in whom the disease returned three times, which was, however, ultimately cured. These cases are certainly not malignant, but are rather to be considered as *nævoid*. I may remark, in conclusion, that the intensity of the pain bears no relation to the size of the growth; but the very smallest sometimes produce as severe, if not severer, suffering as others many times larger.

Stricture of the urethra is the next morbid condition to which I wish to direct your attention, and an affection usually much

neglected by authors. It has been described as very rare; perhaps the superlative should be omitted. I have seen many cases of distinct stricture of the urethra. The seat of stricture was near the meatus, and in two appeared to have been the result of some injury or application to the urethra. In all, the symptoms were, as might be supposed, frequent desire to micturate, attended with great difficulty and forcing; a general feeling of bearing down, referred by some to the uterus. The cause of all this was readily detected by examination per vaginam; no disease was found in the urethro-vaginal septum, nor at the meatus. The catheter being passed, great obstruction was experienced; indeed in one only a small conical bougie could be introduced through the stricture. The treatment in these cases was very effectual and permanent—by dilatation by conical bougies, requiring only a few passages of the instrument. It is possible to suppose a more obstinate form of stricture than these—as cicatrices—as the result of injury to the part; but I think it would not be difficult to cure them, like those in the vagina, by steadily scoring with a straight probe-pointed bistoury, and gentle dilatation afterwards. As a rule, we may say that simple strictures of the urethra are not difficult of cure.

Urethritis.—It is by no means a rare, I might almost call it a frequent occurrence, that the urethra becomes affected by inflammation in cases where vaginitis has resulted from either gonorrhoea, simple irritation or injury, or pressure from parturition, and other known causes, or it may arise from the irritation of acrid urine, highly charged either with lithates or with ammonia; but the most common of its causes are gonorrhoea and parturition. Sometimes the frequent passage of healthy urine alone, as in irritable bladder, will produce urethritis. In cases of urethritis, simple, chronic, or acute, the pain, by the more intelligent of the sex, is referred distinctly to the water-passage, and to that only; but inasmuch as occasionally in chronic, and frequently in acute urethritis, the case is complicated with vaginitis, or other abnormal conditions, it is often difficult, sometimes particularly so, to unravel the symptoms, so as to place each to its respective cause. The annoyance com-

plained of by the patient consists generally, not always, of a frequent desire to pass urine; always much pain, scalding or burning, or soreness in the course of the urethra in the act of micturition, lasting for some little time after; sometimes pain in the course of the urethra. The urethra is frequently tender when pressed during the vaginal examination, and a drop or so of purulent mucus may be made to exude from the meatus in certain cases, especially in the acute forms. When the catheter is passed, the patient, in the severer forms, complains much. In the chronic there is always more or less tenderness. In the former, where the vagina is almost always affected, there is general redness of the vulva and vagina; but in the chronic this has generally subsided, so that only the edge of the meatus and the urethra remains red.

The treatment in the acute form must depend upon the cause, and upon the associated states of vagina, &c. It will be treated in combination with them, by warm, soothing vaginal injections, and by rendering the urine as bland as possible. Where it is the result of delivery, these plans are more particularly to be zealously employed; and should there be retention of urine also, it will be our duty to pass the catheter, notwithstanding the pain it may cause, otherwise we may have a worse malady as the consequence. I need hardly observe that the use of opiates by the mouth is of great value in these cases.

But in the chronic form we must find other treatment, for it is very persistent, and, although not seriously affecting health, except when combined with cystitis, yet it becomes very troublesome both to patient and practitioner. I believe we seldom, if ever, find any advantage in the employment of remedies taken by the mouth. In rendering the urine less irritating according to its condition in lulling the irritability of the urethra, we of course shall find advantage, but beyond that my own experience shows none. But by local treatment the disease is as completely under our control as any disease we have to attack. We may employ either astringent solutions, such as alum, or sulphate of zinc solution, or even one of nitrate of silver; but I think you will prefer the use of these remedies in the more solid form.

Nitrate of silver is very efficient, but rather painful; cast into small sticks, and introduced into the porte-caustique, it can be applied for a short or long period to the whole of the urethra, according as is desirable. It will be generally found sufficient to merely apply it on the withdrawal of the instrument. The most convenient form of porte-caustique is one I use also for the canal of the cervix uteri—a silver tube, having a small caustic-holder on the end of a stilet sliding easily within. It is so constructed that the nitrate can only protrude a very short distance beyond the open end of the tube. The tube is passed up, the nitrate being drawn within. As the tube is drawn out the nitrate is pushed out, and the mucous membrane is touched lightly throughout. This mode is efficacious, but, at the same time, there is more immediate pain than with some other preparations; this, however, soon passes off, and in a day or two much relief is obtained. The application should be repeated for about a week, and a third time at the same interval if required.

Perhaps as efficient as any is the use of bougies covered with tannic acid. The best plan is to cover a medium sized gum-elastic bougie with gum-water, and then to dip it into powdered tannic acid. The superfluous quantity is then shaken off, and the film allowed to dry. Before using it, pass it gently through the fingers to remove any roughness that may be present; then dip it into gum-water and pass it up the urethra, and leave it in ten or fifteen minutes. This may be repeated once a week. There is but little irritation generally; perhaps the next day some slight increase; but by three or four days the former irritation has much subsided, and then two or three applications at intervals of a week are sufficient to complete the cure.

Sulphate of zinc cast in sticks, such as you have seen me employ in cases of cervical leucorrhœa, may be used by simply passing the stick up the urethra, or as nitrate of silver in the porte-caustique, as above. We may thus speedily rid our patients of an annoyance which it were vain to expect removed by other than local remedies. I have employed each of these remedies repeatedly, and could instance numerous cases of its satisfactory results. One may suffice.

A lady had, two years since, first of all during her pregnancy, suffered pain in the urethra, with much pain during micturition. This was not alleviated by delivery, but remained constantly annoying her to a very considerable extent; and the dread of passing urine had caused a constant nervous state. She had consulted her medical attendant, without relief. I found the urethra very tender when pressed on her vaginam, and on passing a catheter, she instantly said it touched the seat of her annoyance. I passed a stick of dried sulphate of zinc, allowing it to remain about five minutes. This caused her some pain at the time, which however subsided in two hours. From this time she had no suffering worth mentioning. A second application was made, and she was quite free from pain when I last heard of her.—*London Lancet.*

EXCESSIVE LACTATION AND ITS EFFECTS.

The process of lactation, says Professor Graily Hewitt, in an article in the *London Lancet*, constitutes a great drain on the system of the mother. A woman in health and of good constitution will suckle her child, and for some considerable time, without experiencing any bad effects; but, under other circumstances, this long-continued supply of food to the infant is productive of very injurious—and not seldom lasting—effects on the body and mind of the individual.

One of the most constant symptoms is the presence of an aching pain in the back; often pain is felt across the shoulders and on the top of the head or forehead. Great pallidity of the skin is generally observed. A marked symptom is want of sleep; the patient will often tell you she has had no sleep for a week, or, when she does sleep, that she is awakened by frightful dreams. There is marked and great debility. The appearance and expression of the face is peculiar in these cases, sometimes remarkably so; it conveys an idea of intense bodily prostration.

The mental changes are worthy of special note. There is almost constantly extreme depression of spirits; the patient

feels as if she had lost all life and energy ; she is desponding and miserable. We have before us, in fact, symptoms which are the possible precursors of a malady of great gravity—viz., puerperal mania. Aberration of mind may occur in connection with or as a result of the exercise of the uterine parturient functions at two periods—viz., as the immediate result of the labor, or later, when the system is debilitated by excessive lactation. It is more frequently a result of excessive lactation, and the necessity for recognizing the first symptoms of this disease is obvious, being, as it is, preventable. The mental disturbance now under consideration generally takes on the form of melancholia ; the delusions relate mostly to subjects of a religious character. A lady under my care became the subject of a very severe attack. She had suckled her child for upwards of a year, and had most imprudently taken some very long walks with her husband while suffering from menorrhagia. She became excessively weak and ill. Delusions to the effect that she had committed the unpardonable sin, that she could not be saved, and the like, possessed her. This case is an instance of the condition to which a patient may become reduced from the excessive drain of unduly prolonged lactation. The menorrhagia in this instance was due to the excessive lactation.

The headache in cases where the cerebral functions are suffering from the effects of excessive lactation, is situate at the top of the head, and it is worthy of note that this spot may be noticed to be perceptibly hotter to the touch than other parts of the head.

In the eight cases forming the basis of these remarks, the patients had all presented symptoms indicating want of vital power. The mental symptoms had not in any one of them passed beyond the stage of extreme melancholy. There had been no delusion, but the disease was not less important by reason of this. Some of these had become so reduced that many months will probably be occupied in repairing the mischief which had been done.

The Treatment.—To wean the infant is obviously the first indication. When should this be done? We have to consider,

it must be recollected, the infant as well as the mother. The infant requires breast-milk for the first month or six weeks. Experience has shown the great difficulty of rearing children from the very first without it; but it is also the result of experience that an infant nourished with breast-milk for that time may afterwards do tolerably well without it. Hence the conclusion, that a mother may pretty safely—for the child—wean it at the age of six weeks or two months. A woman presenting evidence of suffering, such as those above related, should not be recommended to prolong lactation after this period. And in large towns, amongst the destitute classes, this principle appears to be the best that can be laid down. Cases now and then present themselves in which we should hesitate to recommend the process of lactation to be continued so long as a month or six weeks; there are others in which lactation seems altogether improper from the commencement.

The next important indication is to procure sleep. For this purpose one or two grains of opium may be given at bedtime, and it may be necessary to order the patient ten minims of Battley's solution of opium once or twice during the day. When mania has actually come we rely a great deal upon opium; in the form of the bimeconate of morphia it is very applicable in such cases, and very large doses are required. Not less important is the administration of good food. In most of the cases the subjects of these remarks, the patients had been very insufficiently fed. The diet ordered should consist of the most nourishing and easily-digested food: meat twice or three times a day if it can be taken, or eggs, milk, and beef tea. Stimulants are required, sometimes in large quantities. In the case of the lady suffering from religious mania, the effect of excessive lactation, before referred to, the patient took not only stout in large quantities, but wine and brandy daily, and for a considerable time, both during the attack and during the convalescence. The less severe cases must be treated on the same principle.

In all cases where there are any symptoms of mental alienation, or even where the patient is profoundly melancholy, she must

be closely watched. Absolute rest must be enjoyed. In all cases, also, as may be gathered from what has been already said, whether there be signs of mental alienation or not, tonics—iron, quinine, or bark—are indicated.

SIMS' METHOD IN UTERINE SURGERY.

Mr. Sampson Gamgee, of Birmingham, in a report on the present state of surgery in France, published in the *London Lancet* lately, says of Dr. Sims' method, that for all examinations and operations on the vagina and uterus he uses the duck-bill speculum and no other. He dislikes sunlight, and prefers light entering from one window directly at his back to light entering the room from different quarters. The previous evacuation of the rectum greatly facilitates the use of the speculum. A table about four feet long, covered with a blanket, is preferable to a bed or couch for the patient to lie upon. The position is on the left side, body diagonally to the table, so that the buttock rests on the left of the angle next to the operator and the window. The spine straight with the head, which may be raised very slightly if more agreeable; not so the shoulders, for the chest must lie prone and as flat as possible on the table; neither of the arms under the chest, but well apart. The thighs to be bent at right angles to the trunk; legs at similar angle, an assistant raising the feet slightly. For this purpose a small table, a little higher than the one on which the patient lies, is handy to rest the legs upon. It is convenient to flex the right thigh a little more than the left, so as to bring the right heel just in front of the left ankle. In this position the epigastrium is on a lower level than the pelvis; and great importance is attached to the waist being free from all constriction, so that the abdominal viscera may gravitate freely forwards and downwards, and allow of the entrance of air into the vagina when the speculum is introduced. As already observed, this position is the invariable one for inspections and operations. But one exception is made. When the patient has cancer of the womb, in order to avoid

hemorrhage or other accident from striking the cervix with the speculum, this is introduced while the patient is on her knees on a table, the chest prone and the back concave.

Before using the speculum, Dr. Marion Sims invariably ascertains the size, position and direction of the womb; and he does this while the patient lies on her back, by left digital examination, palpation with the right hand above pubes serving to bring the uterus well within reach.

Whenever he introduces anything into the uterus, be it a sound or a tent, a syringe or a knife, he fixes the cervix with a tenaculum, after introducing the speculum, and is thereby enabled to ensure steadiness, and, when necessary, to draw down the neck of the womb into the vagina, and so direct it as at once to see into it. It is only when he so fixes and sees it clearly that he divides the cervix, thus making it an accurately surgical operation, and not merely a mechanical one. In operating for fistula, he always fixes the vaginal wall with a tenaculum before paring it or passing sutures.

TREATMENT OF THE MORNING SICKNESS OF PREGNANCY IN THE LONDON HOSPITALS.

The plan of treatment which Dr. Greenhalgh, of St. Bartholomew's, has found most successful, consists of rest in the semi-recumbent position, especially after meals, which should consist of bland, nutritious, and unstimulating food, frequently administered, and in small quantities. The patient should take a little coffee about a quarter of an hour before rising, and should guard against long fasts. Great attention must be paid to the state of the bowels. In some cases a slight bandage round the lower ribs, and under this a strong sedative application over the epigastrium, appear to have done good. Effervescent, with hydrocyanic acid, belladonna, or nux vomica, ice, and in some cases lemon-juice, have proved useful. Bismuth and charcoal, where there have been large secretions of acrid

mucus accompanied with flatulent eructations, have appeared serviceable. But of all remedies Dr. Greenhalgh places most reliance upon the introduction into the vagina of morphia suppositories, more especially in severe cases, and where an irritable condition, with or without abrasion of the cervix uteri, is found to exist. In such cases he believes little or no reliance can be placed upon remedies taken by the mouth, which he has found rather to aggravate than to relieve the vomiting.

In the practice of the University College Hospital, Dr. Graily Hewitt generally finds benefit derivable from giving the patient some nourishing article of diet, such as a teacupful of beef-tea, a small sandwich of meat, a cup of milk, etc., before raising the head from the pillow. The change of posture from the recumbent to the upright position appears to excite the attack when the stomach is empty, but not so much so when the attention of the organ is, so to speak, otherwise occupied. The patient should remain a few minutes or longer in bed after this early meal before attempting to rise.

Dr. Playfair, in King's College Hospital, is not in the habit of treating cases of "morning sickness" much, unless it is unusually severe, beyond carefully regulating the diet, and removing any obvious source of irritation to be met with in the primæ viæ themselves. He is of opinion that there is much truth in the old belief, that pregnancies without morning sickness are not, as a rule, favorable. He has so frequently noticed that when sickness is entirely absent, other and more distressing reflex phenomena, such as syncope, exist to an unusual degree, that he is disposed to look upon the entire absence of nausea as unfavorable. When morning sickness is excessive he has frequently verified the opinion of Dr. Clay and others, that there is some morbid condition of the uterus itself, and has found local treatment, such as the occasional application of leeches to the vulva, or of iodine paint to erosions of the cervix uteri, to be of great service. With regard to actual medicines, he is disposed to place most reliance on the oxalate of cerium, in doses of two grains three times a day. Next to this, effervescing draughts,

with hydrocyanic acid, ice for suction *ad libitum*, and the subcutaneous injection of morphia answered best. Pyroxidic spirit has not answered as well as was expected.

In the British Lying-in-Hospital, Dr. Murray adopts the following treatment :

One teaspoonful of sal volatile is given before rising. If nausea occurs during the day sinapisms are applied to the epigastric region, with a pill containing the oxalate of cerium and camphor, to be taken twice or thrice daily. In one or two cases he has found the morning nausea and vomiting stayed by getting the patient to eat either a biscuit or sandwich some time during the night, or very early in the morning. Salicine is a drug which he has used with success. He recommends lime-water, in preference to soda-water, to be taken with almost every drink ; and has found nitro-muriatic acid, with some bitter infusion, very useful.

In the Hospital for Women, Soho Square, Dr. Meadows has found the greatest success from medicines which exercise a decidedly sedative action upon the nerves of the stomach. Regarding the sickness of pregnancy as a purely reflex effect of uterine irritation upon the pneumogastric nerves and solar plexus, Dr. Meadows places most reliance on drugs which diminish the sensibility of those nerves in their peripheral distribution. The tincture of aconite in five to ten minim doses, the tincture of belladonna in ten minim doses, the liquid extract of opium in five minim doses, or the dilute hydrocyanic acid in five minim doses: one or the other of these is the remedy which he most commonly and most successfully prescribes. He has also observed marked effects from the oxalate of cerium, or the citrate of bismuth, in five grain doses. In very intractable cases he has sometimes tried with good effect a small blister, about the size of a florin, over the epigastric region, the blistered surface being afterwards dressed with some diluted savin ointment containing one grain of morphia in a drachm.—*London Lancet.*

REPORT OF A CASE OF MEDIAN LITHOTOMY.

By CHARLES C. LEE, M. D., New York.

I am induced to offer the following case for publication, as an additional contribution to the value of Median Lithotomy in young subjects.

The patient, a thin, delicate-looking boy, *æt.* ten years, was brought to the Bellevue Dispensary on the 7th February with the following history :

When he was three years old, symptoms of stone occurred, and were soon followed by complete retention of urine ; his medical attendants relieved the retention, but advised against any interference with the calculus, hoping probably it would be passed *per urethram*.

This never occurred, and the calculous symptoms persisted ; the retention being followed by partial incontinence of urine, and the child growing up thin and delicate, though never confined to his bed. Examination revealed a stone at the base of the bladder which seemed about the size of a hickory nut, although this was only inferred by drawing the sound across it, as the urethra was too small to admit any lithotrite at hand.

The urine was normal in *sp. gr.* and scanty, depositing ropy sediment, but a hazy precipitate composed of pus and blood corpuscles in limited quantity, and a large excess of uric acid crystals ; repeated examinations by Drs. Keyes, Humphreys and myself, yielded the same result.

The boy was ordered ferruginous tonics and cod-liver oil, which he took steadily until February 29, when he was prepared for operation ; and, with the assistance of my friends, Drs. Humphreys and Raborg, of this city, and Dr. A. N. Dougherty, of Newark, Median Lithotomy was performed as proposed by Mr. Allarton and modified by Dr. Markoe. I was induced to select this method, partly because the patient had so narrow a perineum as almost to preclude the lateral operation, and partly from the great advantages claimed for it by Dr. Markoe.

The little patient was in bad condition for an operation of any kind, having such severe bronchitis as to render etherization

both difficult and hazardous. When the membranous urethra had been laid open in the manner described by Allarton, a broad probe-pointed director, devised by Dr. Little, was passed down the groove of the staff, and, between the two, the prostate was cautiously dilated with the finger. This process I found more difficult than I had inferred from Dr. Markoe's paper, or Mr. Allarton's statements—which may, however, have been due to my inexperience, as I had never seen the operation performed. The stone was readily found, and proved to be about the size supposed; had it been too large to admit of ready extraction, I was prepared to crush it *in situ* with a strong pair of straight forceps, rather than deviate from the steps of the operation by incising the prostate. In its withdrawal, which was slowly effected, a small portion of the cortical layer crumbled off, but the fragments were easily removed by the forceps; and after thoroughly washing out the bladder, the patient was removed to bed, having lost certainly not more than a teaspoonful of blood during the operation.

Scarcely any oozing followed, and the boy reacted well from the anæsthetic, which had been a source of more concern than any step of the operation; and during the next day passed most of his urine through the urethra. No untoward symptom ensued; the upper half of the wound healed by first intention, and the boy was allowed to sit up on the ninth day, as he could hold his water three or four hours.

There had, indeed, been no involuntary drainage, or other evidence of prostatic atony from the date of the operation. The bowels were moved spontaneously on the fifth day, and although the perineal wound still remains open to a slight extent, the patient is practically well.

The stone weighed 75 grs. and consisted of an uric acid nucleus, covered with cortical layers of the triple phosphates; no uric acid could be found on the surface of the stone, and it was somewhat singular, under these circumstances, that the urine should have been loaded with uric acid crystals, while it presented no phosphatic deposit.

In view of the facility of the operation and its remarkable

freedom from hæmorrhage, unless the bulb be wounded, which it seems to me need never occur with ordinary care, I confess I should prefer it to the lateral method in any case similar to the foregoing. But it may well be doubted whether, as Mr. Allarton believes, it is destined to supplant the lateral operation in general practice; and it is but just to add that other lithotomists of great experience and repute have not found it to yield the ratio of cures quoted by Mr. Allarton and Dr. Markoe.

The former remarks: "The average mortality is one in twelve, as compared with lateral lithotomy, which is one in five or six; a saving of life equal to one-half;" while in a table of forty-four cases reported by Mr. Williams, of the Norfolk and Norwich Hospital, there were eleven deaths, giving a mortality of one in four. Mr. Alfred Poland and Sir Henry Thompson also clearly intimate their unwillingness to accept Mr. Allarton's statistics.—*Medical Record*.

ANTEDILUVIAN VEGETATION.

The *Revue des Deux Mondes* contains a curious article by M. G. de Saporta on vegetable life during the earliest ages of the world. The strange forms of antediluvian animals have been revealed to us in various ways; a fossil bone, nay, sometimes the mere print of a paw in hardened clay, have at times been sufficient to reconstruct the whole creature with tolerable approximation to truth, as subsequent discoveries have proved. The same method of investigation is now being carried on by those who are endeavoring to revive the flora which existed at a time when England, for instance, was peopled with kangaroos. A leaf, or the mere impression of one, found either in a lump of coal, or on a fragment of some hardened sediment, will at once tell the botanist to what genus of plants it is to be referred; and as observation discovers new facts, the species themselves, generally different from those of our days, are gradually distinguished and classified. It is thus we have at length reached a point from which we may pretty nearly guess what a primeval

landscape looked like. Instead of the endless variety of form which lends such beauty to our plants and stately forest trees, we may picture to ourselves a uniform and gloomy prospect of dreary land, here and there interspersed with clusters of reeds, lepidodendrons, arborescent ferns, and similar straight and formal growths; but no soft grass, no daisies, or other wild flowers. Generally speaking, foggy heavy weather must have been the rule, and rains exceedingly frequent. This was during the Permian period; the Jurassic one was characterized by the prevalence of cycadæ, a family of plants much resembling the palm, and peculiarly remarkable for their very slow growth. They are now chiefly to be found under the tropics. Our present vegetation seems to have made its first appearance during the subsequent, or cretaceous period. The development of the animal kingdom was evidently subordinate to that of the vegetable one; for beasts of prey could not live without herbivora, and these could not make their appearance until there was grass for them.

NEW PROCESS OF EMBALMING THE DEAD. .

Professors Seely and Eames, of New York, have procured a patent for the impregnation of dead bodies with carbolic acid, by which process the body is preserved in a manner said to be superior to that practiced by the Egyptians. They say of their method:

“ We apply the antiseptic liquid to the surface of the body, and also, when deemed advisable, we inject it into the stomach and intestinal canal. For the external application we take a solution of the acid in water, or other convenient solvent, and wash the body with it by means of a sponge or cloth, and when the first washing has been finished, we repeat it one or more times; or, when convenient, we immerse the body in a weak solution of the acid for a short time; or we saturate cloths with a solution of the acid, and then wrap or wind the body in the cloths so saturated, and allow them to remain on the body. The body thus brought in contact with the liquid absorbs it by

degrees, and the decomposition of the body is arrested or prevented.

"We have found that in many cases, and especially in cold weather, the external application of the antiseptic is sufficient to prevent change within a few days. But when it is desirable to keep the body for a long time, we inject a small quantity of the antiseptic into the cavities of the chest and the abdomen. We make the injection by the use of a syringe, and at the natural external openings to the cavities. The amount of liquid to be injected should be at least a few ounces, and we find no objection to the use of such a quantity as will distend the cavities. In addition to the applications of the antiseptic, as above described, we sometimes find it useful to place cotton, wool, lint or cloth, saturated with the acid, in the nostrils and in the ears.

"Our process, when carried out, as above described, is entirely efficient for the preservation of a body during the ordinary interval between death and burial. But when the process is used as an embalming process, or when there are no objections to making incisions into the body, we prefer to inject the acid into the arteries and veins, or in addition to the ordinary external and internal application of the acid, we inject some of the acid through an opening of the skull into the substance of the brain.

"For a further security against decomposition of the body, and especially when the cloths saturated with the liquid are not kept permanently about the body, we place at the bottom or sides of the coffin sheets of felt or cloth, or similar fibrous material, which have been saturated or dampened with the antiseptic liquid.

"In combination with carbolic acid, we have used bisulphite of lime and bisulphite of soda, and a solution of sulphurous or acetic acid, with advantage. But we are satisfied that carbolic acid is the most active and useful agent for our purpose, and that any addition to it is not essential to success. We have found the use of a mixture of carbolic acid with saw-dust, or other inert granular matter, often advisable in the bottom of the coffin."

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

FLORA OF THE SOUTHERN UNITED STATES. Containing abridged descriptions of the Flowering Plants and Ferns of Tennessee, North and South Carolina, Georgia, Alabama, Mississippi and Florida, arranged according to the natural system. By A. W. CHAPMAN, M. D., with a chapter on terms by D. G. EATON. New York: Ivison, Phinney, Blakeman & Co.

This work, in connection with that of Dr. Asa Grey on the Flora of the Northern United States, comprises a complete system of botanical classification for this country, and, with Prof. Grey's Manual of Botany, forms a most excellent series of text books for schools and colleges. They have been adopted as the botanical text books of the St. Louis College of Pharmacy, and we cheerfully accord them the highest praise.

The object of Dr. Chapman's work is to present to the student a systematic arrangement of the phænogamous and higher cryptogamous plants of the Southern portion of the United States. There is also added a very concise sketch of the elements of botany, with a most useful and valuable glossary of botanical terms. There is also a most interesting chapter on the terms, by Mr. Daniel G. Eaton, of New Haven, Connecticut, who has made this a special study. The work, like all school books published by Messrs. Ivison, Phinney, Blakeman & Co., is, in style and manner of getting up, unequalled.

A MANUAL OF THE DISSECTION OF THE HUMAN BODY. By LUTHER HOLDEN, F. R. C. S., Lecturer on Anatomy at St. Bartholomew's Hospital, etc., London. Edited by ERSKINE MASON, M. D., Demonstrator of Anatomy at the College of Physicians and Surgeons, New York. Robt. M. De Witt, Publisher: New York.

This work is intended for the practitioner quite as well as for the student. It is admirably adapted for the beginner in anatomy; the explanations and descriptions are very clear and precise, and sufficiently extensive for all the purposes of a manual in the dead-room. To the more advanced student, or to the physician, it is an excellent work, as being somewhat more descriptive than the dry details usually found in "Dissectors." The work is well executed, the wood cuts clear and accurate, and the type good, which latter advantage will be acknowledged by those who have used smaller type in their anatomical studies, painfully assisted, as in most dissecting rooms, by the poor light, artificial or natural. We recommend the book very highly to our medical students.

MEDICAL REPORTER.

ST. LOUIS, MAY 15, 1888.

Duffield's Fluid Extracts.—We have been using the fluid extracts prepared by Dr. Duffield, of Detroit, and cheerfully express our satisfaction with their action, and can personally recommend them as in every way reliable. The following extract, from an exchange, we cheerfully insert, as well as fully endorse:

“The attention of physicians has been turned of late to the general unreliability, and, sometimes, entire worthlessness of the fluid extracts in common use. This inefficiency may be due to the quality of the drug used, or the dishonesty of the manufacturer, but is, in most cases, more probably, the result of the mode of preparation. The trouble seems to lie with those drugs whose medicinal effect depends on volatile principles, which would be evolved on application of even a low degree of heat.

“Here, then, is the difficulty that the use of heat renders the extract valueless, because it deprives it of its only valuable ingredient. To dispense with this dangerous agent is the effort of every manufacturer.

“Different makers have adopted different methods, involving the use, however, of more or less heat, but none have achieved the result desired, till Dr. Samuel P. Duffield, of Detroit, announced his process, in which he avoids the use of any heat whatever. The following is a short description of this valuable improvement:

“The drug is ground to a coarse powder and placed dry in an iron cylinder. The air is then exhausted by means of an air pump, causing the pores of the drug to give up the air contained in them, and permit the entrance of the menstruum, which is forcibly sucked in through a syphon tube. The effect of this is to impregnate the menstruum with the entire soluble and medicinal properties of the drug, and thus rendering after concentration the aid of heat unnecessary.

"Many of our leading physicians, among whom we might mention Professors Weber and Scott, of Cleveland, Professor Armor, formerly of the Michigan University, Professor Hildreth, of Chicago, have tried fluid extracts made according to Dr. Duffield's process, by Duffield, Parke & Co., of Detroit, with a view to thoroughly test the merits, and have pronounced them decidedly superior to others in use.

"In general appearance they differ much from the dark colored preparations to which we are accustomed. The standard is that of the U. S. Pharmacopœia, sixteen troy ounces of the drug to a fluid pint."

Dr. Robley Dunglison, for many years Professor of Physiology in the Jefferson Medical College, Philadelphia, has just resigned this position, which he has occupied with so much credit. Perhaps no physician in the United States has published so many works upon such various medical topics as Dr. Dunglison; and many of them have been standard text books in our schools of medicine.

Eczema.—Dr. W. T. Belcher says that iodide of lead is a remedy of great value in eczema. It should be applied in the form of an ointment, 12 grains to the ounce, with 1 drachm of glycerine, and 40 minims of chloroform, to relieve the itching. Another formula is the following: Iodide of lead, 20 grains; simple ointment, 7 drachms; glycerine, 1 drachm. The ointment of iodide of lead of the present pharmacopœia is too strong for cases of chronic eczema or psoriasis; it contains 62 grains to the ounce; whereas, from a fifth to a fourth of that quantity is sufficient, and more useful than the pharmacopœial strength. The use of constitutional treatment must be combined with this.

The Cobra Poison.—His Royal Highness the Prince Rama Varma offers 1750 rupees for the discovery of an antidote to this poison. To facilitate investigation, Dr. Shortt, of India, who has himself carefully studied the subject, offers to forward to medical men, properly endorsed, anything they may need in their researches, including living specimens of the poisonous reptiles.

VITAL STATISTICS OF ST. LOUIS.

For the month of April, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	150	Still Born.....	27
White Females.....	108	Under five years of age.....	121
Colored Males.....	22	Between five and twenty years...	80
Colored Females.....	14	Between twenty and forty years.	70
Born in the United States.....	212	Between forty and sixty years....	47
Born in Germany.....	58	Between sixty and eighty years...	28
Born in Ireland.....	40	Bet. eighty and one hundred y'rs	8
Born in other countries.....	16	Total.....	321

DISEASES.

Abscess.....	3	Fever Typhoid.....	13
Albuminuria.....	1	Fracture of Skull.....	1
Apoplexy.....	6	Gangrena.....	1
Asthma.....	4	Gastritis.....	6
Atrophy.....	1	Hemorrhage.....	2
Bronchitis.....	4	Hepatitis.....	3
Burns.....	3	Hydrocephalus.....	6
Cancer.....	5	Hydrothorax.....	2
Carditis.....	2	Inflammation.....	2
Cerebritis.....	3	Labor.....	1
Convulsions.....	18	Laryngitis.....	1
Congestion of Brain.....	6	Marasmus.....	7
Congestion of Lungs.....	4	Meningitis.....	13
Croup.....	3	Necrosis.....	1
Debility.....	7	Old Age.....	2
Dentition.....	4	Paralysis.....	4
Delirium Tremens.....	2	Peritonitis.....	4
Disease of the Heart.....	5	Pertussis.....	2
Diarrhoea.....	14	Phthisis.....	32
Diphtheria.....	4	Pneumonia.....	35
Droopy.....	6	Rheumatism.....	2
Drowned.....	3	Rubeola.....	2
Dysentery.....	4	Scarlatina.....	2
Eclampsia.....	2	Scrofula.....	3
Enteritis.....	4	Scalds.....	2
Erysipelas.....	2	Suffocation.....	2
Fever Congestive.....	2	Tetanus.....	4
Fever Intermitent.....	3	Trismus.....	5
Fever Remittent.....	8	Ulceration.....	2
Fever Puerperal.....	1	Wounds.....	3

Total number of Deaths for April, 1866.....367

Total number of Deaths for April, 1867.....375

Total number of Deaths for April, 1868.....321

T H E

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OPHTHALMIC MISCELLANIES—TRICHIASIS.

By W. DICKENSON, M. D., St. Louis, Mo.

[Communicated for the St. Louis Medical Reporter.]

By this contribution I undertake the presentation of a few practical observations upon the causes, effects and modes of cure of that affection to which the term Trichiasis has been given.

An appeal to the etymology of this appellation furnishes no definite indication of the character or pathology of the disease, except that, in some undefined manner or relation, one or more "hairs" are involved in it. It is not a simple disease occasioned by a single, original cause, but, as commonly received, it comprehends that series of causes and effects of which inflected cilia are the proximate cause—the lesion of the cornea the resultant effect. This inflection of the cilia being abnormal, is in its turn the result of misplacement of the base of their follicles anteriorly, the points of emergence from the tarsal margin being normal, or these latter being dislocated backward towards the globe, they issue near the openings of the meibomian glands, the position of their follicles remaining unchanged; or the deflection of the cilia upon the globe may be the combined result of both these factors. This affection, therefore, consists in the mechanical attrition and irritation of the cornea, and the consequent

results occasioned by a body external to it in position, and in no way associated with it, either in anatomy or function.

A brief consideration of the cilia themselves will enable us to pursue our investigation more intelligently.

The palpebral cilia are by physiologists usually reckoned among the "tutamina" (protectors) of the eye, and this function they certainly perform so long as they themselves and the parts immediately contiguous to them maintain their normal position and integrity; but whenever the textures in which the cilia are implanted become diseased and abnormal nutrition results, with displacement of the cilia, and instead of being salutary appendages, they often become the "fons et origo" of positive lesion, especially to those tissues the integrity of which are essential to perfect vision.

These cilia present an arrangement approximating a triple row, sometimes a fourth in the upper lid, emerging from their follicles along the outer edge of the tarsus of each eye-lid just within the line of junction of the mucous membrane and the skin. Each cilium is from one quarter to one-half of an inch, or even more in length, and from 0,03''' to 0,07''' (of a line) in thickness. It consists of a shaft and a root, the shaft being that part which is fully formed and projects beyond the surface, while by the root is signified all those portions within its follicle, in all its stages of immature development, even from the lowest stratum of cells by which the bulb is elaborated.

Each follicle is a cul-de-sac—an invagination of the corium and epidermis—flask-like in shape, and from one line to three lines in length. It is implanted in the sub-cutaneous cellular tissue, beneath the orbicularis muscle; it extends to and rests upon the external surface of the tarsal cartilage, but at a large angle with it. Here, as in a laboratory, is performed the genesis of each cilium. Its development commences at the base of the follicle, and by the "aggregation of successive cytotlasto or new cells, it is gradually protruded from the follicle, both by the elongation of its constituent cells and by the addition of new layers of these to its base." After its emergence the shaft of the cilium preserves for some distance the direction of its

follicle, and then assumes a gentle curve, which persists to its extremity; that of the upper lid being upward, that of the lower being downward. In consequence of this curvature the cilia are prevented from interlacing with each other when the lids are closed, and the free palpebral margins throughout their entire extent in close apposition. This curvature is due to the greater condensation of the longitudinal fibres of their cortical portion along the concave surface, and though to the cilium normally situated, it confers an element of utility, to the cilium (when superadded to such morbid conditions of the tarsal margin as favor their injurious action), it constitutes a quality especially pernicious.

Hair, however, modified according to place or function, and whenever found upon the human body, rarely leaves the skin perpendicular to it, but at an angle more or less oblique. The same is true of the direction of the follicle in which it is elaborated—both when undisturbed lie in the same direction.

The hair of the negro, however, is an exception to this general statement. In him both the follicle and the matured hair, in reference to the surface of the skin, are disposed at right angles to it; yet in him the eye-brows and eye lashes are exempt from the law which obtains in other parts of the body.

In a great degree the utility and the comeliness conferred by the palpebral cilia are due to this obliquity, the same obliquity affecting all, and symmetrically. This obliquity to the tarsus differs in degree in different persons. A considerable departure from this general obliquity may exist on the part of a few in clusters, or isolated and scattered, within certain limits, without being the occasion of disease or inconvenience; but if these limits are surpassed, if their concavity is inverted, or abnormally situated, emerging near or among the apertures of the meibomian glands, the cilium or cilia thus conditioned become the prolific parent of a progeny of consecutive lesions.

To the first in this category, and chief, has been applied the name *Trichiasis*.

By it is signified that assemblage of abnormal conditions occasioned by such mal-direction or mal-position of the palpebral

cilia, or both, as shall determine their contact with the ocular conjunctiva, and the morbid effects produced by such contact. This definition excludes, consequently, participation of the tarsus in this affection.

Ancient authors made no discrimination between Trichiasis and Entropium, but included all affections of the palpebrae in which the cilia are involved under the general name, Trichiasis. Among modern authors Boyer and Demours adhere to the same designation. While it is obvious that Entropium—signifying the inversion of the free palpebral border and the cilia—can not exist without the co-existence of Trichiasis, yet I can not comprehend how the great experience of those great lights of ophthalmology, Beer and Scarpa, should justify the assertion that, uncomplicated with Entropium, Trichiasis was uncommon. While Mr. Travers and all later authors concur in the testimony that the complication alluded to is quite uncommon.

This affection is very common; indeed much more so than is generally supposed. The casual glance of an experienced eye will detect its presence in the stranger whom he may meet on the street; whilst he himself, ignorant of the real cause and its easy remedy, year after year, suffers constantly and intensely from the incessant irritation and its inevitable consequences. I have now a patient of thirty-nine years of age under treatment for this affection; it has adhered to him during his entire life, he having no recollection of any period in which he was exempt from it. He has endured an endless variety of means and modes of treatment in the vain hope of cure—drugs internally, collyria, some of agonizing potency to the eyes, blisters, setons, &c. His malady was not until quite recently ascertained; nor by any had the only effectual mode of cure been employed.

Another applied a few days since on account of an obscure pain in one eye, occasioning him extreme annoyance, and totally incapacitating him for the pursuit of his profession. A minute cilium, and single, too small to be easily detected by the unassisted eye, was found to be inverted from the lower lid upon the globe at the *lacus lachrymalis*—with its evulsion the pain and all inconvenience ceased.

An old lady nearly eighty years of age, affected also with cataract of both eyes, applied for relief for protracted and severe neuralgia in both eyes. Upon examination I discovered upon each lower lid a cluster of cilia, inflected to such degree that their extremities reached and irritated the ocular conjunctiva. The pain experienced was not external, but deep seated. A single operation (detailed in the sequel) completely rectified the direction of the ~~ergant~~ cilia and simultaneously banished the pain.

In this case it is evident that no kind of topical treatment would have availed so long as the cause existed. But such would have been as rational as in the case of the man just cited, who, in addition to the life-long malady, had also suffered inexpressibly, and without benefit, from the ignorance or indiscretion of those whom he had consulted.

A practical question here arises, viz: the *modus operandi* of so trivial a cause in the production of such serious results? The ocular conjunctiva is the tissue primarily affected by the inversion and attrition of these cilia; this tissue receives its nerves chiefly from the frontal branch of the ophthalmic division of the fifth nerve. Through these, therefore, the irritation is communicated to the ganglionic cells at the origin of the same, and thence reflected through the medium of the second and third nerves to the deeper structures of the globe, wherein the pain was located.

Statistics demonstrate that in certain sections of a country this affection is especially prevalent. It is also found more frequently in those localities where other forms of ophthalmia abound, and it is in those persons who have long suffered from these latter that we more frequently find the disease under consideration to exist. Cork, in Ireland, enjoys an unenviable notoriety in this regard, the proportion being as large as 60 per cent. The Western portions of the United States, particularly those sections adjacent to rivers, also abound with them, and from the coincident prevalence of intermittent fever and its allies, it is not a forced deduction that both, in a great degree, depend upon miasmatic influences for their immediate or

ulterior cause. Certain it is that treatment based upon the acknowledgment of this reciprocal relation proves the most effectual in the cure of ophthalmic disease.

We have already remarked the frequency of this disease. So frequently has it occurred that during the period of one week I have operated thirteen times for its radical cure, and successfully in most cases by a single operation. The injected conjunctiva, "reddened lids," nictitation, blepharospasm, lachrymation, photophobia, to the expert, all declare its presence. These may occur as symptoms of other diseases, but, when quite uncomplicated, are pathognomonic of Trichiasis.

It surely is not a trivial affection, for almost daily experience teaches that if the causes to which it owes its origin are not removed or remedied, they themselves continue as goads to increase the malady and aggravate its effects; and itself, the first in the series of noxious causes, becomes speedily the instigator of others, augmenting in number and energy till first the *function*, and only a little later, the *organ* of vision is sacrificed.

This is no exaggeration; and without multiplying cases in confirmation at this stage of the discussion, we shall find in the sequel abundant evidence to prove that this is not an unimportant affection, and that it can not with impunity be disregarded.

Before proceeding to the consideration of the *causes*—prior in point of time—it comports better with my present purpose to relate the symptoms of Trichiasis.

CASE OF LABOR.

By N. GUHMAN, M. D.

[Communicated for the St. Louis Medical Reporter.]

I was called on April 6th to see Mrs. B., aged twenty-one years, in child-bed, with her first child. After a protracted labor she was delivered of a male child, having passed only eight months in gestation. She was delivered about 12 o'clock at night. I was called again early in the morning to see her, and was told that she took convulsions about 4 o'clock in the morn-

ing, and had had one paroxysm every half hour. I waited about five minutes to see her in one of these convulsions, of which she always had a warning, and could tell about one or two minutes before a paroxysm would come on. The spasmodic movements always commenced on the eyes and arms first; the convulsion, which was of an epileptic form, would last about five minutes, then she would go to sleep, which would last about from five to ten minutes, and then rouse up to a semi-conscious condition until another paroxysm would return. She complained of pain in the frontal region of the head for the last three or four days before she was relieved; her face was puffy, the skin sallow, with a slight reddish tint, constipation, edema of the extremity, pulse was about one hundred, rather hard.

I readily decided that blood-letting was indicated, and proceeded to take from 16 to 20 ounces of blood from her arm. The sensation of the lancet produced a terrible convulsion, which brought on a large tumefaction in the arm, from the infusion of blood into the cellular tissues. I also ordered—

R. Hydrarg Chloridi Miti - - - - gr. xvi.
 Pulvis Jalap Ipom. - - - - gr. xxv.
M. Ft. Chartæ No. v.

Of which she took one every half hour, with the understanding that she had had diarrhœa two days previous. I applied cold applications to the head and warm to the feet. I also ordered twelve cups put on along the spine, which was rather a tedious work on account of the convulsion. At 9 o'clock in the morning I took Dr. Cooper to see her with me. She was then decidedly comatose, with stertorous breathing; the bowels had not moved. We examined her pulse, and found it rather strong and forcible. By the advice of Dr. Cooper, who thought that nothing would save her life but bleeding, we elevated her head and shoulders and resorted to another venesection, and took about ten or twelve ounces more blood from a large orifice, which made a very decided impression on her pulse; continued the powder as before. With careful nursing, her recovery from this on was rapid and complete.

At 11 o'clock the convulsions were less frequent, but quite as violent. Her bowels had not moved, so I ordered an enema, and to take internally small doses of croton oil and calomel every hour until her bowels moved, which they did about 1 o'clock in the afternoon quite freely. At 3 o'clock her condition was a good deal better; continued the powders first prescribed about every two or three hours, accordingly as her bowels would move. At 10 o'clock in the evening her condition was decidedly better; had no more convulsions. After 2 o'clock she was a little more conscious; stopped the powders as the bowels operated copiously; discontinued the cold applications, as at each application she would be restless, and pulled it from her head.

April 7th, called at 8 o'clock in the morning. She had had a good, sound sleep during the night, and was conscious of everything; complained of no pain, except her tongue was very much swollen; could hardly speak; she had a little appetite, but gave her nothing but tea and ice water. On the afternoon and evening she was about the same as in the morning, and still improving.

April 8th, called in the morning. She had slept very well during the night; her pulse was very good, but frequently complained of being hungry; ordered light food.

I report this case more to draw the attention of the profession to these cases of disease which are so terribly fatal and hard to subdue, at all times requiring prompt and efficient treatment. It might be asked why I did not use opiates, or anti-spasmodics, or anæsthetics, as some authors recommend? I will answer that question with a very simple explanation. I believe that the disease is nothing more or less than a congested state of the brain, and probably the spinal column. I doubt that such a treatment would remove the cause, and it would bring on the same state of things which we were striving to prevent, coma and death. In conclusion, I will say that this case did not present very well marked indications for the use of the lancet, but it was well borne. She had had diarrhœa up to within forty-eight hours previous, and still I gave her alterative

doses of mercurials, with strong purgatives; she did not take any anodyne medicine whatever, and required no after treatment, which proves the benefits of the method employed.

A NEW DEVICE FOR THE TREATMENT OF FRACTURE OF THE PATELLA.

By J. H. HOBART BURGE, M. D., New York.

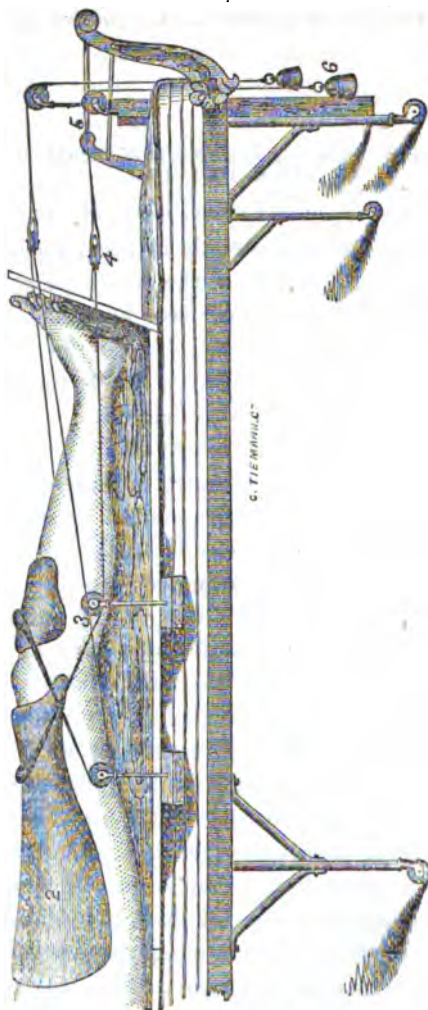
The number of methods already in use for securing the best possible union after fracture of the patella is so great, and so much ingenuity and experience have been brought to the subject, that one could hardly excuse himself for occupying afresh the attention of the surgical world, unless he felt sure that he had something of real value to contribute.

If the fracture be simple and there be no considerable swelling of the limb, it will not be necessary to bandage from the foot. Should there be much local inflammation an evaporating lotion should be applied till its severity is abated. In other cases we may proceed at once to the permanent dressing.

Place the limb upon a straight splint of uniform width provided with a foot-piece and comfortably padded. The foot may be elevated, or not, as seems best in individual cases. A substantial piece of sole-leather, of suitable length and width to cover the anterior aspect of the thigh, should be nicely fitted by narrowing it towards the knee and making its lower end concave, to adapt it to the upper border of the patella. Immerse it in cold water till it is thoroughly pliable. (If hot water be used it will take too long to dry.) Pad it on one side with cotton-batting and cover with cotton cloth, neatly sewed on. Confine it to the limb by means of a bandage evenly applied. After a few hours it will be firm as a board. Then a small, strong cord, stitched across the lower end of the splint (2), is passed through a pulley at a lower level (3) on either side of the limb, and made to complete the circuit by traversing a pulley (4) beyond the foot. Another cord passes over the wheel (5) at the foot of the bed, connecting the flying pulley (4) with the weight (6). The

206 *New Device for Treatment of Fracture of the Patella.*

lower fragment may be dressed in a similar manner, as shown in the engraving. Further description is unnecessary.



The amount of extension and of padding, and the tightness of bandages, must, of course, be left to each surgeon's judgment. The smallest sized metallic pulleys are cheaper, more appropriate, and just as efficient as the larger. Those at the side of the limb should not be attached to the long splint—it is better

to screw them into separate strips of pine board lying transversely under the long splint. Their distance from the limb, and their inclination from the perpendicular line, must vary in different cases; otherwise the cord will sometimes press unpleasantly upon the sides of the limb, or slip from the pulleys.

While my efficient House Surgeon, Dr. A. E. Spohn, was dressing a case for me, he introduced what I have called the "flying pulley" (4), and I was glad to adopt it, equalizing as it does the pressure upon opposite sides of the limb.

When the leather splint has become dry and firm, the bandage which secures it may be replaced by strips tied or buckled around, outside of both upper and lower splints, thus leaving the circulation free in the sides of the limb.

The straight splint upon which the limb rests may be divided transversely and strongly hinged opposite the knee, to enable the surgeon to make slight passive motion without disturbing the dressings; in this case, however, it will be necessary to support it upon another board.

The advantages promised by this apparatus are:

1. It leaves the injured bone so exposed to the surgeon's observation that he need have no anxiety in reference to *tilting*, *side-slipping*, or *retracting* of the fragments.

2. It grasps so firmly, and yet so tenderly, the quadriceps extensor, together with the upper fragment of the bone, that it enables us to approximate the broken surfaces more completely than I have ever been able to do without violence.

3. It is comfortable to the patient.

4. It is inexpensive, simple in all its parts—easily extemporized and easily applied.

I am not unmindful of the fact that some are now treating these fractures without apparatus of any kind, and I have no doubt that where the separation of the fragments is very slight, some of the best results will follow this plan of non-interference. This expectant method in surgical practice must, however, be the exception and not the rule.

Surgeons using this apparatus are requested to report their cases, bad, good and indifferent.—*Medical Record*.

DESTRUCTIVE POWER OF EXPLOSIVE SUBSTANCES.

A considerable amount of alarm has been produced in the public mind by the circumstances under which two terrific explosions have recently occurred, involving much loss of life and injury to persons and property. One of these explosions has been traced to the treasonable designs of Fenian conspirators; the other, which has just occurred at Newcastle, was the result of an accident; but both are equally calculated to induce the apprehension of danger, which it appears may arise either from the designs of men acting recklessly under the influence of strong political feelings, or from the conduct, equally reckless, although less wicked, of men seeking to advance their commercial interests.

The calamitous results of these explosions have caused attention to be directed to the nature of explosive substances, and to the extent of the destructive power which such substances may be capable of instantly calling into action when subjected to the influence of very slight chemical disturbance.

The action of explosive substances is due to a sudden expansion, sometimes followed by a collapse, occasioned by a chemical change in the materials of which the substance is composed. Explosive substances, which may be either solid, liquid or gaseous, sometimes consist of mere mixtures of two or more ingredients, which, although not in the first instance chemically combined, are capable of yielding chemical compounds; and the explosion arises from the sudden production of such compounds, chiefly in the form of gas, which, having a volume vastly greater than that of the original substance, causes a violent concussion of the atmosphere. It is thus that gunpowder, consisting of charcoal, sulphur and niter, mechanically mixed together, on the application of fire to any part of it, undergoes a complete chemical change, in which large volumes of gas are produced. Gun-cotton, which has been proposed as a substitute for gunpowder, differs from it in being already a definite chemical compound. But it is a compound of an unstable nature, which is easily broken up, and other more stable but gaseous compounds are

then produced. It is the difference in volume between the solid gun-cotton and the gases resulting from its sudden decomposition under the influence of heat that gives to it its explosive power. Gunpowder and gun-cotton nearly resemble each other in the nature and extent of their explosive power. They do not belong to the most dangerous class of explosive substances, and their applicability for the purposes for which they are generally used, and to which their names refer, depends upon the fact that the explosion is not so sudden and violent as it is in other explosive substances, such as fulminating mercury. This latter substance could not be used in a gun as gunpowder is, without its destroying the gun by the effect of the suddenness and violence of the explosion.

Nitro-glycerine, the substance which caused the recent explosion at Newcastle, differs from the foregoing substances in being a liquid. Like gun-cotton, it is a definite chemical compound, not a mere mixture of ingredients. It also resembles gun-cotton in chemical constitution, and in the manner in which it is produced. The one is made by the action of strong nitric acid on cotton wool, and the other by the similar action of nitric acid on glycerine. The explosive power of nitro-glycerine is said to be about ten times as great as that of gunpowder, on which account it has been extensively used in mining operations. It has been manufactured near Hamburg, under the name of "Nobel's patent blasting oil." It is also known by the name of "glonoin oil." About two years ago a quantity of it was exported from Liverpool to Colon, at which port it was being, landed from the steamer, when a dreadful explosion occurred, which destroyed the ship, did extensive damage to the jetty at which the ship was unloading, and to many houses in the town, and killed upwards of forty persons. The immediate cause of its explosion at Colon was not clearly traced; but as it occurred during the removal of the tin cases containing it from the hold of the vessel, and as its explosion is usually effected by percussion, as for instance by striking with a hammer a piece of rag or paper wetted with it, the disaster probably resulted

from some similar cause, as also, most probably, did the recent explosion at Newcastle.

This dangerous substance is said to have been largely used for mining purposes in North Wales; and as the only place at which it is known to be made is in Germany, it is obvious that in conveying it from one place to another by ship and rail, life and property must be jeopardized to a fearful extent. An act of Parliament was passed last year for the express purpose of prohibiting its being sent by any public conveyance, or stored in any warehouse, without due notice being given of its dangerous properties. The circumstances under which it has been stored in the center of a populous town will, of course, become subject-matter for judicial investigation.

The terror which has been caused by the explosion at Clerkenwell has occasioned some false alarms and exaggerated fears to be entertained by the public with reference to impending dangers from similar causes. Thus, a report was current a few days ago that a barrel of gunpowder had been found at one of our gas works, which had been placed there, it was said, for the purpose of causing the explosion of the gas in the great gasometers. These fears may be allayed by the simple statement that the gas, in the state in which it is stored at the works and supplied to our houses, is not explosive; and that it is only when it is mixed with a large proportion of atmospheric air or oxygen that it becomes so.

In some instances attempts have been made to set fire to buildings by the use of a composition called "Greek fire." This is a solution of phosphorus in sulphide of carbon, both highly combustible substances, and one of them very volatile. When the mixture is exposed to the air, the sulphide of carbon quickly passes off in vapor, and leaves the phosphorus in such a finely-divided state, that in contact with the oxygen of the air it ignites spontaneously, burning with its characteristic energy, and thus communicating ignition to any combustible matter with which it may come in contact. A small bottle of Greek fire thrown into a house, as was attempted in Grosvenor Square a few days ago, might be sufficient to set the building on fire.—*Lancet*.

CASES OF OVARIAN TUMOR—SPONTANEOUS SUBSIDENCE OF AN OVARIAN TUMOR.

By SAMUEL MITCHELL, M. D., of Cameron Mills, New York.

In the fall of 1858 I was called into an adjoining town, some twelve miles distant, to see Mrs. O., aged about forty years. Found her with a large tumor occupying nearly the whole abdominal cavity. It was multilocular, and of a rather more than usual hardness. As I learned the history of the case, it had been between one and two years in attaining its present size; when first discovered was about the size of an egg, and situated in the region of the right ovary. During its growth it was attended with but little pain or tenderness, except after performing some unusually hard labor. Her general health seemed but little impaired. I diagnosed it as an ovarian tumor, and declared my conviction that it was incurable by medical treatment. The patient was courageous, and asked as to the probable chances of a successful operation for its removal. A correspondence was opened with Dr. Frank H. Hamilton, then of Buffalo, which resulted in his visiting the patient December 8, 1858, with the view of performing the operation of ovariectomy, if deemed best, after a personal examination. After a careful examination of the case, in view of the comparatively comfortable state of health of the patient, the inestimable value that a few years of life would be in rearing her family of little girls, and of the great risk necessarily attending the operation, he decided not to operate. I have seen her occasionally since that time. There was a steady increase in size of the tumor until within the last two years. It got to be very burdensome from its great size and weight. The only way she could keep about was by wearing a strong bandage with shoulder-straps. She continued to have fair health, has never been tapped or taken any medicine for it. A few weeks since I met her in the street, not having seen her for nearly two years. She was so much diminished in size I was quite uncertain about her identity. I learned upon inquiry of her that she had ceased to menstruate within two years, since which the tumor has steadily decreased in size, and was now about the size of a small child's head, quite hard,

and rather firmly fixed. She has no pain, and says she is well, and is doing her own housework. She added, "Tell Dr. Hamilton I have lived to raise my girls, and to see them happily married and settled in life, and I am feeling better than when he so mercifully spared me the operation."

The points of interest in this case are the length of time it has continued, and the fact of the gradual and great diminution in size of the tumor after the cessation of the menses.

SPONTANEOUS RUPTURE AND CURE OF OVARIAN TUMOR.

Mrs. J., aged thirty-nine, and the mother of several children, miscarried some time in July, 1865, after which she continued in frail health. I was called to see her the last of October. She had complained of almost constant pain and tenderness in the region of the right ovary for some time. At the time of my visit there was considerable febrile excitement, and so severe pain as to require a large amount of anodynes to control it. By an external examination, a firm and hard tumor two or three inches in diameter, quite tender to the touch, was discovered, apparently attached to the right ovary. She continued in very poor health, with much pain and tenderness in the tumor, which slowly increased in size, until January 1, 1866, when the pain and tenderness gradually subsided, and she regained comparative health, and was enabled to attend to her usual household duties until the latter part of July following, when, after severe exercise, the pain and tenderness returned in a greatly aggravated form, and the tumor much more rapidly enlarged. It now occupied the whole right abdominal region, and extended some distance past the mesial line into the left side, and reached above the umbilicus; was distinctly nodulated. August 11, was called in haste. Found that the tumor had burst through the vaginal cul de sac, and discharged a large quantity of a dirty-colored serous fluid, to the great relief of the patient. The discharge steadily decreased until the 28th, when a free discharge of offensive smelling pus took place, which gradually ceased. September 21, the tumor opened by a small orifice at the umbilicus, which discharged first a thin greenish pus, gradually becoming

serous. From this time the tumor steadily diminished in size until January 1, 1867, it had totally disappeared, and the patient has been enjoying good health up to the present time, with no signs of a return of the tumor.—*New York Medical Journal.*

A NEW INVALID BED.

There is now on view at the establishment of Mr. Ward, the invalid chair-maker, Leicester Square, a new invalid bed, admitting of a much greater variety of movements than any of those at present in use. The upper framework has adjustments similar to those of an ordinary fracture-bed, permitting the body to be raised to various inclinations, and the knees to be bent to various angles. But the peculiarity is, that this framework is supported, under its centre, on a large ball and socket-joint, which allows the whole framework, with its variously adjustable parts, to be moved about bodily in all directions, so as to be inclined longitudinally, laterally, or both, and to be moved round so as to face all points of the compass. By means of a simple locking apparatus, the framework is firmly fixed in any attitude that may be desired; a few turns of the handle sufficing again to release it, and any other attitude to be assumed. Among the advantages obtained are these :

The patient may be taken out of bed and put into bed again without the effort ordinarily required. The ball being unlocked, and the bed being gently tipped forward, so that its lower end reaches the floor, the patient comes upon his feet; and after the sheets have been changed, or some needful act performed, he is placed with his back against the inclined surface of the bed, which, being then made to revolve backward, he lies as at first.

By a lateral instead of a longitudinal inclination of the bed, the patient may be turned over from the back on to the side, or contrariwise, saving the labor and pain often entailed by this change.

The longitudinal inclination of the bed being changeable at pleasure, the patient may lie or may sleep at any angle that he may prefer, or that is prescribed, either with the head higher than the feet, or, as it is sometimes desirable, with the feet somewhat higher than the head; the inclination being, of course, adjustable to a nicety and changeable at will.

The movable framework which supports the trunk being raised, so that the trunk and legs form an angle (which may be varied to any extent up to a right angle), the whole bed may then be moved longitudinally round its centre of support, so that the body in this bent position may have the head and feet placed at all varieties of relative elevation. For example, while the trunk is horizontal, the legs may be greatly inclined upward, an attitude that is desirable where injury of the foot or knee renders it proper to diminish the pressure of blood.

The framework that bends the knees being raised, as well as that which inclines the trunk, the same longitudinal rotation of the framework gives a great variety of partly reclining, partly sitting postures. The patient may be placed, without any effort to him, in all attitudes between that of lying horizontally and that of sitting upright in an easy chair.

These movements may, of course, be all of them joined with any such degree of lateral inclination of the bed as is desired; so that, supposing the framework has been adjusted somewhat into the form of an easy chair, and tilted forward or backward so as to bring a wounded arm or foot to the right height, the bed may be at the same time tilted sideways, so as to bring this wounded arm or foot on the uppermost side, into the most convenient position for dressing the wound.

At the same time the movement of horizontal rotation being brought into play, the whole bed may be moved round until the injured part is turned toward the light; this same horizontal rotation being, at other times, available for giving the patient change of view, enabling him to look out of the window when raised in the sitting posture, or to have his face turned away from the light if it is distressing.

To the side of the framework is fixed a movable arm, carrying a small table to support a plate or basin, and this, by a slight change of position, also becomes a reading easel.

One of the advantages of the bed, not originally foreseen, but which has come out in practice, is that of being able to make certain changes in a patient's position quite suddenly. When the ball and socket-joint is but partially locked, so that a moderate force applied to the head or foot of the bed will change its position, the patient, previously lying back, may be instantly raised into the sitting posture if a coughing-fit come on.

One further use that may be named is, that when the ball and socket-joint is completely unlocked so as to permit perfect freedom of movement, two attendants, seizing the handles on the opposite sides of the bed, may give the patient a little exercise by rocking the bed from side to side in the manner of a cradle.

Beyond the special advantages above described, there are some general advantages. The ability to change the posture of the patient in such a variety of ways and degrees, without any effort to him, must tend to diminish that pain, weariness and irritability caused by long continuance of the same attitude, or by small choice of attitudes, and must so conduce to convalescence. A further result to be anticipated is, that bed-sores may be avoided, the points of chief pressure being changeable at will, and as often as is desired.

This bed, devised by Mr. Herbert Spencer, the distinguished biologist and philosophical writer, for a member of his own family, has been in use between four and five months, and has so far answered expectations, that he has had a second made with sundry improvements, hoping that it may be of service to others. Mr. Spencer has refrained from patenting it, not wishing to place any obstacle in the way of its general use.—*British Medical Journal*.

CHLORODYNE.

By EDWARD MCINALL, JR.

An empirical preparation called chlorodyne, of which so much has been said during the past few years, originated in England about the year 1860. The one claiming to be original was that introduced by Dr. J. Collis Brown, and since its introduction there have been many imitations, both in Europe and the United States. Among some of the English preparations may be mentioned Freeman's Chlorodyne and Towle's Chlorodyne, all purporting to be original articles, but I think that of Brown has the proper claim to originality.

Owing to the cost of importation, and indeed its high price on the other side of the Atlantic, many of our pharmacutists have been induced to imitate it.

I have examined the many published formulas, but find most of them in a degree impracticable. The Chlorodyne of Brown is a thick viscid mixture, having a strong chloroformic odor combined with the pungency of capsicum, with a greenish hue.

Now, the advantage of being syrupy is, I think, entirely unwarranted. The idea of using glycerine or treacle is to unite the morphia and chloroform more intimately together; but what may the need be, if it can be done without?

Another disadvantage in some of these imitations is the use of oil of peppermint. The liability of mistaking chlorodyne for essence of peppermint, as now directed by our pharmacopœia, at once suggests the abandonment of the use of peppermint as a flavoring ingredient in so powerful a combination. I was led to make, not an imitation of Brown's, but a preparation in which efficacy and practicability were combined. In the manipulation of pharmaceutical agents, it is not imitation so much that should be arrived at as the correct therapeutical effects.

The mode by which I have made it during the past year is as follows:

Take of Sulphate of Morphia.	grs. lxiv.
Alcohol, 95 per cent.....	f3ij.
Chloroform Purif.....	f3vj.
Sulphuric Acid.....	q. s.
Ext. Cannabis Ind. (Allen's).....	3ss.
Oleoresin of Capsicum.....	gtts. xij.
Hydrocyanic Acid (Scheele's).....	gtts. xcvj.

Shake together the sulphate of morphia, alcohol and chloroform, then add the sulphuric acid, shake well until it becomes clear, then add the oleoresin of capsicum, ext. cannabis and hydrocyanic acid.

This, when finished, is a clear, dark green liquid, possessing the acrid taste of capsicum and odor of chloroform. When held to sunlight or artificial light, it has a dark rich claret color. It may be exhibited in doses from fifteen to thirty drops. It has been extensively used by many of our most eminent city practitioners, who prefer it to Brown's in many cases.

I have often heard it stated that one of the principal objections against the use of chlorodyne, is the fact of its containing ext. cannabis, which, however, appears to be modified in this article by the other constituents.

So much was our preparation admired that, in the space of a year, we had dispensed over one hundred ounces entirely upon prescriptions. There is a preparation made by a leading firm in Philadelphia, to which mine corresponds in appearance, but the objection to it is, it deposits a small quantity of morphia upon standing a little time.

I also examined another preparation, made by an assistant of Davenport, the proprietor of Brown's Chlorodyne, which it strongly represents. One serious objection against this was, that it was designed to be given in teaspoonful doses. Chlorodyne has become so popular among physicians that, if they should prescribe it, not knowing it was made of this strength, they might be disappointed in its effect. Hence the necessity of having a preparation uniform in its proportions, and practical in its mode of manipulation.

As a valuable remedy, chlorodyne has been highly extolled, and in some instances has acted as a specific in epidemic cholera, which is its principal use. Its other medicinal powers are reputed to be anodyne, diaphoretic, antispasmodic and astringent. In prescribing so powerful a substance, physicians should be perfectly familiar with its dose and other properties. Each teaspoonful contains one gr. sulph. morphia and about half a grain of ext. Indian hemp, and a drop and a half of Scheele's prussic acid, equal nearly to four drops of U. S. Pharm. acid.—*American Journal of Pharmacy.*

CHRONOLOGY OF ANÆSTHESIA.

The following is a chronological history of painless surgical operations during the anæsthetic state, induced by the inhalation of narcotic and stimulating vapors :

"The first surgical operation during an anæsthetic condition, induced by the inhalation of the fumes from rum, was the reduction of a dislocation of the hip-joint of a negro, 'Bob.' Louisiana. By Dr. Collyer. December, 1839.

"Extraction of tooth from Miss Mary Allen during an insensible condition, induced by the inhalation of ether combined with the fumes from poppy seeds. Philadelphia. By Dr. Collyer. November, 1842.

"Publication of 'Pycography' (copy-righted work), wherein at pages 26, 27 and 28 particular mention is made that the inhalation of narcotic and stimulating vapors will produce the anæsthetic state. Philadelphia. By Dr. Collyer. May, 1843.

"Insensibility produced by the inhalation of protoxide of nitrogen. Hartford, Connecticut. Horace Wells. 1845.

"Publication in *Boston Medical Journal*, that ether, combined with opium, would produce the anæsthetic state. Boston. By Dr. Smilie. June, 1846.

"Administration of ether by Drs. Morton and Jackson. Boston, United States. September, 1846.

"Inhalation of chloroform. Edinburgh. By Dr. Simpson. 1854. (1847?—Z.)

"Amylene. London. By Dr. Snow. 1857.

"Bichloride of methylene. London. By Dr. Richardson. 1867."

THE FOOT.—It may be doubted whether there exists throughout the whole civilized world a well formed foot. Many exquisites of both sexes claim admiration for their pedal extremities, but it is the boots and shoes which cover them which we are called on to admire. Their feet, if bared, would present a very great divergence from the classical idea of beauty. The firmly-planted foot, neither too large nor too small, but justly proportioned to the height and weight it sustains, the smooth surface and regular curved lines, the distinctness of the divisions and the perfect formation of each toe, with its well marked separateness, and its gradation of size and regularity of detail, to the very tip of the nail, are now to be seen only in art. In Greek nature they were found, for the ancient sandal, which left the foot unfettered, gave freedom to the development of its natural grace and proportions. The modern boot or shoe, with the prevalent notion that everything must be sacrificed to smallness, has squeezed the foot into a lump, as knotty and irregular as a bit of pudding stone, where the distorted toes are so imbedded in the mass and mutilated by the pressure, that it is impossible to pick them out in the individuality and completeness of their original forms.

As our coarse climate forbids the sandal, and renders the shoe necessary, care should be taken to adapt it as perfectly as possible to the natural conformation of the foot. It should be long and wide enough to admit of a free play of the toes; the space between the heel and sole of the shoe should be firm and of a curve the same height as the natural foot, while no part of the artificial covering should be so binding as to prevent the free action of the muscles and circulation of the blood.

BICHLORIDE OF METHYLENE.

The following are Dr. B. W. Richardson's general conclusions in regard to the bichloride of methylene :

" 1. It is an effective general anæsthetic, producing as deep insensibility as chloroform.

" 2. In action, it is rather more rapid than chloroform, but to develop effects more of it is required, in the proportion of six parts to four.

" 3. It produces a less prolonged second degree of narcotism than other anæsthetics.

" 4. When its effects are fully developed, the narcotism is very prolonged, and is reproduced with great ease.

" 5. Its influence on the nervous centres is uniform, and it creates little, if any, disturbance or break of action between the respiring and circulating functions.

" 6. Its final escape from the organism is rapid, so that the symptoms of recovery are sudden.

" 7. In some cases it produces vomiting.

" 8. When it kills it destroys by equally paralyzing the respiring and circulating mechanisms.

" 9. It interferes less with the muscular irritability than perhaps any other anæsthetic.

" 10. It combines with ether and with chloroform in all proportions."—*Med. Times and Gazette.*

ACADEMY OF MEDICINE, PARIS.—M. Ricord, in taking his place as President of the Academy of Paris, sums up the losses by death and gains by election of the Academy. Jobert, Trousseau, Follin, Velpeau, Rayer, Petroz, Guibourt, Jadioux, Civiale, ("who knew," he said, "how to *attach* his name to the first surgical conquest of modern times"), and Lagneau, are among the losses. Barthez, Chauffard, Demarquay, Gueneau de Mussy, Hardy, Hérard, Legouest, Mialhe and Vigla are the recruits.

EFFECT OF DARKNESS AND SILENCE.

Dr. Kane and other Arctic voyagers have all testified that, in those regions "where eternal silence reigns supreme," the effect upon the brain and ear from the absence of sonorous impulses in the atmosphere is exceedingly annoying and absolutely injurious to the auditory nerves. As the organs of hearing are destroyed by loud and continued noise, and an intense light will weaken and ultimately destroy the power of sight, so it would appear that the auditory or optic nerves become impaired by the partial or total deprivation of their natural stimulus, sound or light. Dr. H. Ralls Smith, of Chicago, wishing experimentally to investigate this subject, recently spent a considerable length of time in the Kentucky Mammoth Cave, where silence and impenetrable darkness reigned supreme. The effect was very distressing, and almost insurmountable, resulting in temporary defection of hearing and aberration of mind. From his own experience, this gentleman is firmly convinced that the blindness of the finny denizens of this cave has been brought about gradually through successive generations, and from his observations he is confident that the sense of hearing is also wanting in these beings, although originally existing in the species when first immersed in their living tomb.—*Scientific American*.

OVARIOTOMY.—M. Richet, of Paris, recently attempted ovariectomy under circumstances which deserve to be mentioned. The patient was forty-five. The tumor for two years and a half had been gradually acquiring an enormous distension. The abdomen, however, instead of bulging forward or presenting a globular form, was flattened and enlarged. M. Richet therefore suspected the presence of extensive adhesions, and operated only at the patient's urgent request. On opening the abdomen, the adhesions between the cyst and the abdominal walls were found so numerous and resisting that M. Richet declined proceeding with the operation. Judging from the adhesions be-

tween the cyst and the abdominal walls, he felt convinced that the adhesions between the cyst and pelvic organs would be such as to render the operation impossible. The incision was therefore closed by means of a suture, and the following night the patient died from peritonitis. The autopsy justified M. Richet's prognosis. The adhesions between the cyst and pelvic organs, especially the uterus, were such that they could not be got rid of even by means of the most careful dissection.—*Lancet*.

ON EXPRESSION OF THE FŒTUS, BY DR. KRISTELLER.—Dr. Kristeller, quoting a paper by V. Ritgen, on "Delivery by Pressure, instead of by Extraction," advocates the use of this method in certain cases of inaction of the uterus. He says it has the advantage over extraction of not requiring the premature rupture of the membranes, of not disturbing the flexion of the foetal chin upon breast, or limbs upon trunk, and of bringing the uterus into correct relation with the axis of the pelvic brim. It is executed by placing the patient on her back, the operator spreading his hands upon the uterus, so that the palms shall be able to compress the fundus downwards, whilst the thumbs and fingers shall compress the uterus on the sides. The pressure is made to resemble the course of a natural contraction in its progress and periodicity. It may require to be repeated fifteen or twenty times. If more than this is necessary, the case is unfit for operation. Expression, or "squeezing out," of course, will often excite uterine action, which will help the operator. Expression is also most useful in aid of extraction, as, when the forceps is used, Kristeller relates cases in proof of the value of his method.—*Monatsschr. f. Geburtsh.*

IODIDED OPODELDOC.—This preparation, though known for a number of years, has not received the attention it merits, and with a view of bringing it more to the notice of the profession, I give the formula.

Take of iodide of potassium, eight troy ounces; alcohol, 30° Baume, two pints.

Mix the above and form a perfect solution.

Animal soap finely shaved, fourteen troy ounces; alcohol, 30° Baume, two pints.

Dissolve the soap in the alcohol in a flask over a sand-bath; when dissolved mix the two solutions and add oil of garden lavender, two drachms.

This is usually dispensed in one or two ounce wide-mouth vials, which should be filled while the opodeldoc is warm and in a fluid condition; when cold it forms a translucent mass, melting at the temperature of the body, and as an external application, possessing many advantages over the ointment of iodide of potassium.—*Wm. C. Bakes.*

A PERMANENT MASS FOR PILULA FERRI IODIDI.—Iodide of iron being so unstable when exposed to air, Mr. L. Gross proposes the following form for a permanent pill-mass, which may be prepared extemporaneously:

Take of iodine.....40 grains.

Reduced iron,

Powdered acacia—*aa*.....10 “

Powdered sugar.....20 “

Glycerine15 drops.

Powdered althæa.....q. s.

To be made into 50 pills.

Triturate the iodine and the iron thoroughly together, dry, until they are reduced to a fine powder; then add the glycerine, and rub till the fumes of iodine cease to be given off, and the mixture assumes a greenish color. Then add the acacia and sugar, and, lastly, sufficient powdered althæa to bring to a pillular consistence.

The mass should be very stiff. When the pills are formed roll them in ferri pulv., and then coat them with tolu.—*Ex.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. By T. GAILLARD THOMAS, M. D., Professor of Obstetrics and the Diseases of Women and Children in the College of Physicians and Surgeons, New York, with 219 Illustrations. Philadelphia: Henry C. Lea. 1868.

Professor Thomas has given to the profession a very excellent work under the above title, confining himself to the diseases of non-pregnant women, thus leaving out such affections as phlegmasia dolens, &c., which he very properly thinks belong to the accoucheur to treat. He has prepared this work for the wants of the American medical student and the practitioner, and has placed them under obligations, which they will not be unwilling to acknowledge. The plan of the work is that usually followed by similar productions on the same subject in this country and in Europe. There is one feature which we think adds much of ornament and utility, and that is the historical sketches which introduce the several subjects. Certainly, the ardent student will hardly be content in his pursuit of this branch of medicine without the thorough knowledge which such a description of the subject must give. The numerous well-executed wood cuts add very much to the value of the book. This, together with the typographical execution, contributes to the elegance of its appearance. The work is a valuable addition to the many works which have been written on the subject, and will find a place in the library of every practitioner, whether a specialist or engaged only in general practice.

TREATISE ON THE DISEASES OF THE EYE. By CARL STELLWAG VON CARION, M. D., Professor of Ophthalmology in the Imperial Royal University of Vienna. Translated from the third German edition, and edited by CHARLES E. HACKLEY, M. D., and D. B. ST. JOHN ROOSA, M. D. Illustrated by ninety-six wood engravings and eighteen chromo lithographs. W. Wood & Co., New York. 1868.

The profession must certainly acknowledge its indebtedness to the translators for placing this complete work of Stellwag within reach. The great care and the extraordinary labor (for they have translated the work in fact twice—the second edition, and when the third edition appeared, that also, in order to give all the changes and additions) entitle them to the highest praise. Of the work itself, we can only say that it is the most thorough which has thus far appeared, and we might say almost original, for the author has given us the results of his own labors in every

division of the subject. Without being specialists in this line of practice ourselves, we can readily see from our attentive examination of the work, how every part, every section, has been conscientiously developed, not only from the assistance of authorities, but also from the careful thought and investigation of the author himself. The seventeen years that have elapsed since the discovery of the ophthalmoscope have wrought wonderful changes in this branch of medicine; and the exactitude that has resulted in the study of the diseases of the eye must be a constant source of satisfaction to the practitioner, when it is considered how obscure were formerly the treatises on this subject, and when we think of the uncertainty that prevails in the treatment of general disease. Much still is left to perfect this division of medical science; much is every day discovered, but the large body of toilers in this comparatively new field is rapidly overcoming the difficulties; thanks to the assistance of a work like the present, which surveys the whole field, and defines the limits between the known and the unknown. Of course, the work is in the hands of every ophthalmologist. The general practitioner would do well to make it an addition to his library, if only as a reference in the ordinary cases of eye disease with which he may meet.

OBSTETRIC CLINIC—A PRACTICAL CONTRIBUTION TO THE STUDY OF OBSTETRICS AND THE DISEASES OF WOMEN AND CHILDREN. By GEORGE T. ELLIOTT, Jr., A. M., M. D., Professor of Obstetrics and Diseases of Women and Children in the Bellevue Hospital Medical College, etc., etc. New York: D. Appleton & Co. 1898.

This very excellent work is a collection of highly interesting cases from the lying-in room, gathered from an experience running through a period of fourteen years. The work differs from the usual obstetrical treatises, for while it treats of the same subjects, such as puerperal eclampsia, hemorrhage, induction of labor, obstetric operations, &c., yet the numerous illustrations are introduced as the premises from which the conclusions are drawn, or the rules of action established, as the reader may see for himself. It is thus, in this country, at least, a work unique of its kind, and is calculated to afford more general satisfaction than the usual run of obstetric works, which are but a repetition

—one of the other. A faithful record of cases, with the results, unsuccessful and otherwise, gives a better line of action to the general practitioner than the oftentimes very indefinite rules laid down for his guide. The cases are honestly detailed, and the conclusions from them are such as any unbiased mind would make; indeed, we see no theory to sustain. We recommend the work most highly to the profession, and above all for imitation to those practitioners who have had like extensive opportunities for observation in the same field, but who have discharged their duties to the profession only in part by neglecting to record their experience.

THERAPEUTICS AND MATERIA MEDICA—A SYSTEMATIC TREATISE ON THE ACTION AND USES OF MEDICINAL AGENTS, INCLUDING THEIR DESCRIPTION AND HISTORY. By ALFRED STILLE, M. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania, etc., etc. Third edition, revised and enlarged, in two volumes. Philadelphia: Henry C. Lea. 1868.

This work is now too well known to need comment at our hands. For the student, it is probably the best work that can now be used—extensive enough for all his wants, and not too much so to oppress him with the excess of knowledge. The principles inculcated are such as will bear the test of the experience of the best physicians at the present day; and the descriptions and the history of the medicines are correct, and given in such a manner as to make this part of the work, usually considered so uninteresting, rather however from the great number of medicinal agents, highly attractive.

The author has been successful in his attempts to advance the subject and benefit the profession, and we repeat our recommendation of the work to the student; he can have no better book. The paper, type and style of the whole work do infinite credit to the good taste of the publisher.

ELECTRO-PHYSIOLOGY AND THERAPEUTICS; BEING A STUDY OF THE ELECTRICAL AND OTHER PHYSICAL PHENOMENA OF THE MUSCULAR AND OTHER SYSTEMS DURING HEALTH AND DISEASE, INCLUDING THE PHENOMENA OF THE ELECTRICAL FISHES. By CHARLES E. MORGAN, A. B., M. D. W. Wood & Co., Publishers, New York. 1868.

The above title expresses the character and object of this work, in extent of 709 pages—a production which encompasses the whole subject of electricity so far as known; as the result of a vast amount of experiment of the author, now dead, it is probably the most erudite treatise ever before written. The intimate acquaintance of the author with his favorite pursuit must make him the standard of authority, and we have no doubt the work will tend to develop the subject of electricity more than ever before, and invest it with a practical value which it has never hitherto reached. Certainly, it will hold a position in the library of every one who is engaged in this study.

MEDICAL REPORTER.

ST. LOUIS, JUNE 1, 1868.

Professional Labors of Joseph Jones, M. D., of Nashville, Tenn.

At the nineteenth annual meeting of the American Medical Association, held at Washington, D. C., May, 1868, Dr. Hibbard, of Indiana, stated that the section on physiology, after a careful examination of the contribution by Dr. Joseph Jones, entitled "Albinism in the Negro Race," recommended that, in view of its great excellence, it be submitted to the Smithsonian Institute for publication. The report, on motion, was accepted.

Dr. Paul F. Eve presented to the section on surgery and anatomy, a treatise, illustrated with paintings in water colors, entitled "Investigations upon Pyæmia, with observations upon associated diseases supervening upon gun-shot wounds," by Joseph Jones, M. D., of Tennessee.

Dr. Palmer, after an animated debate, mainly upon the question of its mode of publication, offered the following, which was unanimously adopted :

WHEREAS, In the present financial condition of the association, it is impossible to incur the expense of publishing the contribution of Dr. Joseph Jones; and,

WHEREAS, Its presumed great value as a scientific paper entitles it to a permanent place in the medical literature of the country; therefore, be it

Resolved, That said treatise be referred to the Committee on Publication, who shall be empowered to bring it to the notice of the Medical Department of the United States Army.

In the medical memoirs of the recent war, collected and published by the United States Sanitary Commission, the contributions of Dr. Joseph Jones upon pneumonia, typhoid fever, cerebro-spinal meningitis, diarrhea, dysentery, small-pox, scurvy, intermittent, remittent and congestive fever, and other diseases of the Confederate army and Federal prisoners, occupy one-third of the work. It is also announced that a large portion of the surgical memoirs will be from the same pen. We have also published, in a late number of the MEDICAL REPORTER, an interesting treatise by Prof. Jones, entitled "Observations upon the method

of investigation and classification of the Phenomena of Mortification ;" and we shall commence, in the July (1st) number of the *REPORTER*, an elaborate resume of the "Indigenous Remedies of the Southern States, that have been proposed as a substitute for Quinine in the treatment of Fevers, &c."

It has fallen to lot of but few men of the present day to do more for the advancement of medical science than Dr. Jones. As evidence of the appreciation of his labors in Europe, we can only state that Baron Larrey, Inspector General of the French Army, requested, through the French Ambassador at Washington, copies of the works of Dr. Jones for presentation to the Imperial Institute, and has recently nominated this gentleman as a corresponding member of this renowned institution.

Morehead, Bond & Co., New York, have in press a work on the "Microscopic Examinations of Blood and the Vegetations of Variola, Vaccina and Typhoid Fever" from the pen of our esteemed friend and correspondent, Prof. J. H. Salisbury, of Cleveland, Ohio. Dr. Salisbury having been engaged for a number of years in making microscopic observations on the blood, and having made many very valuable and interesting discoveries in that department of medical science, renders the interest felt in his forthcoming volume much greater than in any work of the same nature published for many years. The publishers will have the book ready for distribution by about the 1st of July next. It will be in the usual excellent style of finish, which ever characterizes all works issued from the Agathynian press. We shall notify our readers in due time of its appearance, and place a more extended notice of the contents of the work in our review on receipt of the same.

Dr. John Homans, a well-known practitioner of Boston, lately died, having lived beyond the age of seventy. He was engaged in the active duties of his profession to the very day of his death.

Dr. James R. Wood has been elected Emeritus Professor of Surgery in Bellevue Hospital Medical College.

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

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J. S. B. ALLEYNE, M. D., AND O. F. POTTER, M. D.

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No. 8

IMPERFECT TRANSITION OF THE TESTES.

By T. H. HAMMOND, M. D.

Just before commencing the dissection of a body last winter, at the St. Louis Medical College, we discovered that there were no testes in the scrotum, nor was there any cicatrix of the scrotum. Dissecting the right side for hernia, the spermatic cord was found hanging out of the external abdominal ring about two inches. The testicle was found at the internal abdominal ring, and was about one-sixth the size of a normal testicle. The vas deferens did not communicate with this testicle. On the left side, about two and a half or three inches of the cord hung out of the external abdominal ring; the testicle was in the inguinal canal, the internal ring being large. This testicle was about the size of the right one, perhaps a little larger. The vas deferens communicated with the left testicle. The subject was examined carefully by Dr. J. J. McDowell, and was seen by Professor Stevens, Judd and many others. The man was probably about fifty years of age, had a tolerably heavy beard. He was certainly sterile, so far as the right testicle was concerned; the vas deferens not communicating with the testicle, nor do I believe that the development of either testicle was sufficient to enable him to procreate.

To this non-descent of the testes into the scrotum, the term *Cryptorchidismus* is applied, and is very raro. In Curling's

work on the diseases of the testes, it is stated that in examining 10,800 recruits, but one case was found in which neither testicle had descended into the scrotum; five in whom the right and six in whom the left testicle was not apparent. John Hunter saw but one case in which both testicles remained in the abdomen. Professor Stevens, of this city, says he knows one man in whom but one testicle has descended into the scrotum. It seems that the left testicle fails to descend more frequently than the right, in the proportion of seven to five.

The testes found in the abdomen descend and reach the scrotum sometimes during the eighth or ninth month, occasionally not until a short time after birth, or at some period previous to puberty. Curling's experience is that if the testes do not descend into the scrotum within twelve months after birth, they fail to do so perfectly without hernia; therefore, if they have not descended within that time, he applies a truss to prevent their descent and the escape of the intestine.

Paralysis and non-development of the cremaster muscles are enumerated among the causes of imperfect transition of the testes. Peritonitis attacks the fœtus in utero, which renders the testicle adherent to some of the abdominal viscera. The smallness of the external abdominal ring is supposed to be one of the most frequent causes, from the fact that the testicle is more frequently found in the inguinal canal than in the abdominal cavity. The groin is a much more unfavorable position for development than the abdomen; the testicle is also liable to be compressed by the movements of the limbs and action of the abdominal muscles, and to be injured by blows. A testicle has occasionally been found in the perineum.

A moment's reflection will satisfy us that retention of the testicle in the inguinal canal or abdomen is attended with danger to life, as any disease of the testicle may produce fatal peritonitis.

Has the cryptorchis the power of procreating? Acton says that non-descent of the testes in men is almost invariably attended by sterility. He admits that there are on record a few cases of such men having families, but says such is not his ex-

perience, and refers to cases where impotence and sterility resulted from this cause. He gives the case of a married man, in whom no testes were felt in the scrotum or groin. He had erections, emissions and gratification, yet our author concludes that he had not the power of procreating; from the fact that the testes had not descended, and his wife, who had no children, presented all the external attributes of a person likely to have a large family. Such evidence is not conclusive.

He thinks the fact that the elephant and some other animals, the cetaceæ, birds and reptiles have the testes in the abdomen, points to the possibility that the testes of man *may* secrete semen though they remain in the abdomen. Such, however, he thinks is the exception and not the rule. He says that observations made upon animals prove that when the testes remain in the abdomen the semen contains no spermatocidal animalcules, "and observation and experience prove that the animals in whom double cryptorchis is found are unfruitful and barren." Acton says that Mr. Godard has investigated the subject and concludes that "men, both whose testicles are arrested in their evolutions are sterile, but not impotent; that those who have for their generative apparatus only vasa deferentia, are sterile, and nearly incapable of sexual intercourse."

Hunter believed that the testes remaining in the abdomen were very imperfect, and probably incapable of performing their functions, yet it is stated that in the only case he had seen "the person had all the powers and passions of a man." But we are not told what was the evidence that he had the "*powers*" of a man.

Curling gives several cases in which both testicles remained in the abdomen, the men begetting children. One of the men was married twice, had children by both wives, and was very sensual. Holding a situation at a public house, "he intrigued with the landlady and debauched the bar-maid." In another case a double hernia existing, no testicle was felt on the left side; on the right a rudimentary one of the size of a pea. It is stated that the erectile and virile powers were good. The hernia was

reduced, a truss applied, the small testicle retained without the abdomen. It began to enlarge, and in a year or two was apparently a perfect testicle. He married and his wife bore children. A student of Sir A. Cooper having both testes within the abdomen, committed suicide on that account. The testes were nearly of natural size, and it is said that the ducts contained semen. Other cases are given, the testes undescended; the individual seeming to be virile. As Curling remarks, it is unfortunate that the secretion of these retained testes was not examined microscopically. In many cases the virility was admitted upon sufficient evidence. The indefatigable Sims and some Frenchmen would have pushed the investigation a step further. In the case of Sir A. Cooper's student who committed suicide, a microscopic examination of the testes and ducts should have detected spermatazoa, if the testes were capable of performing their function. While writing this article I got the testicle of a dog, and taking a little of the secretion from the vas deferens and placing it under the microscope, found spermatazoa. I have known the same done with the testes of a mouse.

SPECTRUM ANALYSIS.

By G. HURT, M. D.

Read before the St. Louis Medical Society.

Few discoveries in science have led to grander results than that of the analysis of light by the Spectroscope.

The following *resume* of the history of spectroscopic literature is drawn—1, from a paper by Prof. Letheby, of the London Hospital College, published in their hospital reports for 1866, and reviewed in the April number of the American Journal of Medical Sciences, 1867. 2. A series of Lectures by Prof. Miller, of King's College, published in the Clinical News, (American reprint) for July, August, September, October, 1867, and 3d, a paper by Dr. Herapath, published in the Clinical News, (American reprint) for May, 1868.

In some paragraphs I have interpolated my authors verbatim.

In others, for the sake of brevity, I have endeavored to present the idea without the verbiage.

The discovery of the solar spectrum by Sir Isaac Newton in 1701 remained without scientific importance for nearly a century thereafter. For it was not until in 1802 that Wollaston, by substituting a slit for this circular aperture, for the admission of light, so improved the spectroscope that it brought out dark lines not before seen in the spectrum, and it enabled him to examine the spectre of different kinds of light, as the flame of a candle, electric light, &c. And he noticed that there was a difference in the spectra of each, a fact which has since been recognized as the starting point of spectrum analysis. A few years later, Fraunhofer, a German optician, placed the prism before the object glass of a telescope and so magnified the spectrum that he was able to mark the positions of the dark lines and produced a diagram somewhat after the manner of the bars in a scale of music, which has proved of great service to subsequent investigators.

In 1822, Brewster and Herschel examined the spectra of flames colored with different kinds of salts, such as are used in pyrotechnic chemistry, and the latter stated as the result of his observations, that *the colors communicated by the different bases afford in many cases a neat way of detecting extremely minute quantities of them; and that the tint arose from the molecules of the salts being reduced to vapor and held in a state of violent agitation*, and Talbot, a year or so later, demonstrated the truth of this statement.

In 1835, Mr. Wheatstone gave an account of the spectra produced by the prismatic decomposition of electric, voltaic and electromagnetic sparks, and noted the difference between the spectra of those fluids when taken from different metals, showing that the metals might, in this way, be readily distinguished from each other.

He noticed further, that these appearances were the same, whether produced in atmospheric air, carbonic acid or a vacuum, which proved that they were not the result of combustion merely. From this time observers in the field of spectroscopy

became numerous, and continued to add new facts to those already attained, till in 1859 Kierchoff announced the discovery that *the rays which a substance emits, are the rays which it absorbs*: phenomena, which Dr. Letheby thinks corresponds to those of radiant heat, as also to those of actinic or chemical action.

Atoms, says Tyndall, which swing at a certain rate of motion, intercept waves in the 'ETHER,' which swing at the same rate; atoms which vibrate red light, will stop red light; and those that vibrate yellow light will stop yellow light, and so on.

The motion, says Miller, of the nature of light which philosophers at present adopt, is that filling all space, and filling the interstices of all matter, there is a subtile substance, which, for want of a better name, is called "*ether*," which has no weight; is not light itself, but is the means by which light is manifested to us. When this *ether* is thrown into vibration, the vibrations are transmitted through space in right lines, in all directions from the point of agitation; and when the vibrations have a certain degree of frequency, they produce the phenomena of radiant heat, and when they have a somewhat greater frequency, they produce the phenomena of light; and when still more frequent, what are known to us as chemical phenomena are produced. Now, as the different degrees of frequency with which the *ether* can be made to vibrate, give rise to these different classes of phenomena, so too will each class of phenomena present modifications, according to the kind and degree of motion which is produced in the atoms and molecules of matter. The absorption of light or heat is a transference of motion from the *ether* to the molecules immersed in it, and the absorption exerted by any atom or molecule is chiefly upon those vibrations which arrive in periods coinciding with its own rate of oscillation. This appears to be true of any variety of vibrations, and demonstrates the aphorism or law, announced by Kirchoff, that *the rays which a substance emits are the rays which it absorbs*; and in the case of a metal, for instance, the vapor of the metal, when put in the track of a beam of light, will stop its own peculiar vibrations and therefore produce dark lines in the spec-

trum where those of its own characteristic colored bands would have appeared; or, if the bands are obtained from the incandescent vapor of a metal, and the light thereof is made to pass through a similar vapor, the course of the light is stopped, and there are no bands at all.

The reason, therefore, why incandescent solids and liquids exhibit a white light and produce a continuous spectrum, consisting of all the prismatic colors is, that their atoms swing in every variety of vibrations from the red to the violet; whereas, the vapor of an element swings only in certain definite vibrations. The application of these facts to the explanation of the luminous phenomena of the universe, and more especially to the analysis of celestial bodies is most interesting, for as the results are not influenced by space or distance, it follows that whenever light enough can be obtained from any body to produce a spectrum, it affords the means of ascertaining its nature and of determining its condition. The test which this method of analysis affords for many of the elements and especially for the alkaline metals and their compounds is of such extreme delicacy that Swan found that he could detect the $\frac{1}{8000000}$ part of a grain of sodium by its characteristic yellow tint, and owing to the general presence of its salts in minute proportion in air and water, he frequently found it difficult to get a flame free from the flame of sodium.

Kirchoff and Bunsen deflagrated different substances in a room of a certain capacity, and by noting the prismatic effects, found that they could detect the $\frac{1}{800000}$ part of a grain of potassa or baryta; the $\frac{1}{1000000}$ part of a grain of lime or strontia; the $\frac{1}{8000000}$ of a grain of lithia, and the $\frac{1}{80000000}$ of a grain of sodium; and as these substances are known to volatilise at different temperatures, this can be detected even when mingled together in the same spectrum.

If a little of the ash of a cigar is placed upon a platinum wire and moistened with muriatic acid and then heated, the characteristic lines of sodium, potassium, lithium and calcium are plainly visible. A drop of the mother liquor of almost any mineral

spring will show the colored lines of the alkalies and alkaline earths.

It will be seen then, that by this method of research, traces of substances can be detected where they were not before suspected to exist, and but for this method they might have remained forever undiscovered. By it the astronomer is enabled to span the vast ocean of space, and bring the most distant visible stars into intimate relation with his thoughts, and can define their chemical and dynamic properties and relations with almost as much certainty as he can those of our planet.

But what interests us most in a practical point of view at present is the application of chromatic spectrum analysis to physiological and pathological research, and in the discovery of the chemical and physiological nature, of organic and other coloring matters by the recognition of their spectral phenomena.

The blood, when examined for its spectrum under the action of different re-agents, says Letheby, shows that the coloring matter is principally concerned in the phenomena of respiration.

The appearance of the spectra is the means of discovering the presence of blood in very minute quantities. Hoppe, who first drew attention to this subject, became acquainted with it by passing a ray of light through a weak solution of blood and examining it under the prism. Stokes took up the inquiry and discovered that the coloring matter of the blood, when fresh, differed from that of the hematine of Lehmann. Being soluble in water, and possessing the power of absorbing oxygen and giving it out again with great facility, and that the spectra of the two different states of oxidation were very different. He named the substance cruorine, and distinguished the two states of oxidation by calling the first or arterial state, scarlet cruorine, and the second or venous state, purple cruorine.

He states that but little is known in regard to the changes which take place in the coloring matter of the blood in passing from cruorine to hematine, except that it occurs spontaneously and from very slight causes. But how far this may be concerned in the development of diseases is scarcely to be surmised; and the difference often seen in the appearances of blood, both

before and after death, may, the author thinks, be due to abnormal proportions of scarlet or purple cruorine or to the presence of their altered product, hematine.

As cruorine is found to exist in two different states of oxidation, so is hematine, and hence we have brown hematine and red hematine. Most chemical reagents convert scarlet cruorine into brown hematine, without previously passing through the stage and properties of purple cruorine. It is the brown hematine which is usually discovered in old blood stains, but red hematine in dry and more recent blood clots.

These optical properties of blood were first noticed by Hoppe in 1862, and subsequently by Stokes, in 1864, and by Sorby, in 1865. Spectrum analysis is capable of rendering greater service in chemical and pathological inquiries. As by means of optical spectra, blood may be easily recognized in urine and detected in some forms of albuminuria, even though it be also charged with the coloring matter of bile.

Highly jaundiced urine absorbs all the blue end of the spectrum, but as the green, orange and red rays are unaltered, the two bands of scarlet cruorine are readily seen. Recent menstrual fluid, when dissolved and properly diluted, gives the spectrum of scarlet cruorine. Herrapth remarks that, in all optical experiments, it is necessary to use excessively dilute solutions of the coloring matter, otherwise the fluid is absolutely opaque to light, or it will transmit only the extreme red rays.

When still more diluted, the blue end of the spectrum is quite absorbed and so are two bands in the green, and also occasionally in the red.

Only two substances have been found comparable in their optical effects to those of hematine, and likely to be mistaken for them, viz.: a diluted solution of carmine in ammoniacal liquor, and a similar solution of cochineal. In both these substances the coloring matter is the same, as carmine is the product of cochineal.

But the two absorptive bands in the spectra of these substances are much broader and more diffuse than any of the optical appearances of the coloring matter of the blood; and though most like those of brown hematine no novice in spectrum analysis could possibly mistake the one for the other.

NINETEENTH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

FIRST DAY—TUESDAY, MAY 5, 1868.

Prof. Samuel D. Gross, President, in the Chair.

The Association met at Carroll Hall, Washington, D. C., pursuant to adjournment, and was called to order by the President, at 11 o'clock.

Prayer was offered by the Rev. Dr. William Pinckney, of Washington.

Dr. Grafton Tyler, as Chairman of the Committee of Arrangements, tendered the greetings of his Washington brethren to the Association in a pertinent and happy manner. He heartily welcomed each and every one of the gentlemen present, in this the metropolis of the country, the city founded by the Father of his Country. He welcomed them all as the representatives of the great and proud profession of which he was an humble member. He spoke of the profession as it existed in this district—its colleges, hospitals, etc., and of the rare opportunity that would be presented to each member to visit these, and examine the relics of the battle-fields, and view the advancement of the profession in its science. He said, you are assembled here to day to consider the most important interests confided to man, the health and the happiness of the world; for has not all the world received the aid of American medical science? The speaker then referred to the integrity of the body, which he alleged was national in its principle—no sect, no politics, no sectional feeling ever having divided it. He concluded by again bidding all present an earnest welcome.

An announcement was then made of the time and place for the meeting of the several sections; also, a notice of the various entertainments to which the members were invited, after which Dr. Atkinson, Permanent Secretary, called the roll of members, according to which it appeared there were 218 delegates then present.

The President then proceeded to read his annual address, and after several allusions to the catholic spirit of medicine, and the contributions to science by America, he discussed the question of alleged laxity in regard to the admission of members. He also dwelt upon the complaints uttered by some against the character of papers published in the Transactions, as well as the question of medical education. A sound *preliminary* education, he maintained, was an essential feature in the scheme. Reforms should begin in the office of the private preceptor.

He also referred to the questions of good nursing, medical evidence, the rank of medical men in the navy. In the course

of which he significantly compared the condition of the medical service among Europeans, with the tardy action of our own country in the matter. He also referred to the benefits which would accrue from the publication by the Association of an annual medical register, as well as from the establishment of societies for the relief of widows and orphans of medical men. This idea was first broached by Dr Benjamin Rush, in 1808, and successfully carried into operation in New York city, where he believed the only organization of the kind existed. Veterinary schools and the training of veterinary surgeons, came in for a share of attention. In this respect, this country was far behind the Old World. Up to 1863, Europe contributed nearly 3,000 works upon this subject, while in America hardly a dozen had been published.

The election of officers, as provided for by the present constitution, the speaker considered to be founded upon a wrong principle; as a remedy, he suggested that the ballot in the hand of every delegate be substituted. The time of meeting should also be extended to a week.

The address concluded with an eloquent tribute to the memory of members deceased within the year.

The thanks of the Association were, on motion, tendered the speaker, and a copy of the address requested for publication.

Dr. Lee moved, in view of the importance of the subjects discussed in the address and the suggestions offered, that their consideration be entrusted to a special committee, with instructions to report at the next meeting; and Doctors Charles A. Lee, D. Francis Condie and John L. Atlee were appointed said committee.

The reports of the following committees were presented and disposed of as below :

"On Ophthalmology," Dr. Jos. S. Hildreth, Illinois, Chairman. Referred to Section on Surgery and Anatomy.

"On Rank of Medical Men in the Navy," Dr. N. S. Davis, Illinois, Chairman. Referred to Committee on Publication.

"On Insanity," Dr. C. A. Lee, New York, Chairman. Referred to Section on Psychology.

"On the Treatment of Club-Foot without Tenotomy," Dr. L. A. Sayre, New York, Chairman. Referred to Section on Surgery and Anatomy.

"On Medical Ethics."

Dr. Henry I. Bowditch reported by letter. The only points brought to his consideration were (1) the status in the profession of regularly educated and otherwise well qualified female

physicians. He strongly advocated the recognition of their claims.

(2) The case of Dr. Julius Homberger.

The report gave rise to an animated debate. The matter was finally disposed of by making the whole subject of female physicians the special order of business at noon, on the succeeding day.

That portion of the report which referred to the case of Dr. Homberger was referred to the Committee of Medical Ethics.

"On the Climatology and Epidemics of different States." Reports were received from the following gentlemen, referred to the Section on Meteorology, Medical Topography and Epidemic Diseases:

"Pennsylvania," Dr. D. F. Condie. "Texas," Dr. T. J. Heard. "Illinois," Dr. R. C. Hamil. "West Virginia," Dr. E. A. Hildreth.

"The Committee on Prize Essays" reported that none of the four papers offered in competition were of sufficient merit to be entitled to either of the prizes. Report accepted.

The following committees report progress, and were continued at their own request:

"On Clinical Thermometry in Diphtheria," Dr. Jos. G. Richardson, New York, Chairman.

"On Operations for Hare Lip," Dr. Hammer, Missouri, Chairman.

The Committee "On the Ligation of Arteries," Dr. Benjamin Howard, New York, Chairman, stated by letter that owing to illness and other causes, he had been unable to prosecute his experiments, and asked to be discharged from the further consideration of the subject. Committee discharged.

The following reports were made special orders of business for the morrow:

Committee "On Medical Education," Dr. A. B. Palmer, Michigan, Chairman, at 10 A. M.

The report of the Committee "On Medical Literature," Dr. George Mendenhall, Ohio, Chairman—a special order immediately following the disposal of the former.

The remaining committees, excepting only those who did not respond, were privileged to read their reports the succeeding day.

The following voluntary papers were offered, and, on motion, referred to the Section on "Meteorology, Medical Topography and Epidemic Diseases:"

"On the Use of Disinfectants in Scarlatina," by Dr. Nelson L. North, New York.

"On the Prevention of Cholera and the Bowel Affections of Summer," by Dr. N. S. Davis, of Illinois.

The meeting then adjourned until 9 o'clock the next morning.

SECOND DAY—WEDNESDAY, MAY 6, 1868.

The Association was called to order at 9 A. M., by the President, and minutes of the preceding meeting were approved.

A letter from the Medical Association of New Orleans, proposing that the next Convention be held in that city, was read, and, on motion, laid on the table.

The President invited Professor Nathan R. Smith, of Maryland, to the platform, which was carried by acclamation.

Dr. Marsden, of Quebec; was also accorded a similar honor, and briefly addressed the Association.

Professor John Gamgee, of the Albert Veterinary College, Bayswater, London, was introduced by the President, and invited to address the Association.

The Professor then delivered an interesting address, bearing upon the mutual relations existing between medical and veterinary science.

Dr. Lee, of New York, then read the report of the Committee on Topics, treated of in the President's Inaugural Address, and the report was accepted and referred to Committee on Publication.

Dr. Davis moved that the Committee be instructed to embody their suggestions in the form of resolutions.

Dr. Cox reported from the Committee on Change of Plan in the Organization of the Association. Report laid on the table under the rule governing proposed amendments to the Constitution.

The report of the Committee on Medical Education, being in order, was read by Dr. A. B. Palmer. Referred to the Committee on Publication, with the recommendation that the same be published.

Dr. Davis asked the indulgence of the Association for the purpose of making an explanation.

Dr. Davis then stated that, with the view of maturing their plans, the Committee addressed the several Medical Colleges of

the country, regarding proposed changes, suggestions, etc. Although somewhat dilatory in their responses, progress was being made.

Several schools had endorsed the plan agreed upon by the Convention of last year.

For these reasons no convention was called this year to further discuss the matter.

Dr. Palmor, by leave of the Association, stated that several gentlemen had expressed the view that the programme of study was too revolutionary in its character. He was, however, ready to correct any errors of statement in the report in question.

Dr. Comegys offered the following, which was adopted :

Resolved, That the American Medical Association refers the whole subject of medical education to the faculties of the regular medical colleges of the nation, pledging itself to adopt and enforce any system or plan that may be agreed upon by two-thirds of all recognized medical colleges.

Resolved, That the resolution be referred to the Committee already acting in this matter, and they are requested to report within two years from this session.

Dr. Mendenhall, of Ohio, read the report of the Committee on "Medical Literature." Referred to Committee on Publication.

Dr. Hibberd moved that all communications relating to the next place of meeting be taken from the table and referred to the Committee on Nominations.

The following papers were read by title, and referred to the sections as below designated :

"On the Best Methods of Treatment for different forms of Cleft Palate." By Dr. Wm. R. Whitehead, of New York. To Section on Surgery and Anatomy.

"Remarks on some of the Operations for Vesico Vaginal Fistule, with an account of a new self retaining speculum, and a new mode of securing the patient" By Dr. Nathan Bozeman, of New York. To the same section

"The Treatment of Syphilis by Hypodermic Injection." By Dr. L. Elsberg, New York. Referred to the same section.

"A Series of Plans for the Collection and Statistical Arrangement of Facts in regard to Climatological and Sanitary Conditions of the various States." By Dr. Wm. Faulds Thoms, of New York. This paper was accompanied by the statement that these plans, when filled up, will enable investigators to

trace the comparative influence of these facts in the production of epidemics. Referred to Section on Meteorology, Medical Topography and Epidemic Diseases.

"On the Climatology of South Carolina." By Dr. Percival, of Aiken, S. C. Referred to same section.

"A new method of reconstructing the lower lip after removal by disease" By Dr. Gurdon Buck, of New York. Referred to Section on Surgery and Anatomy.

Dr. Hamilton stated that he had an apparatus for the administration of anæsthetics, the invention of a friend, not a member of the Association. This he considered to be of value, and desired an opportunity to demonstrate its mode of application. Referred as above.

Dr. Atkinson stated that Dr Benjamin Lee, of Philadelphia, had printed copies of a paper entitled "Diagnosis of Spinal Arthro-Chondritis," which were at the disposal of members. This was not published, but simply printed for the occasion.

The Association took a recess of five minutes for the purpose of electing members of the Committee on Nominations.

The report of said Committee was as follows :

Maine, N. P. Monroe ; N. H., S. B. Twitchell ; Vt., Sumner Putnam ; Mass., H. R. Storer ; R. I., Otis Bullock ; Conn., Ashbol Woodward ; N. Y., J. H. Armsby ; N. J., Samuel Lily ; Penn., A. M. Pollock ; Del., H. F. Asken ; Md., Thomas H. Helsby ; Va., W. O. Owen ; W. Va., R. H. Cummins ; Ga., R. D. Arnold ; Ohio, Wm. H. Mussey ; Ill., Jos. S. Hildreth ; Ky., Geo Bealer ; Tenn., J. M. Keller ; Ala., J. S. Wetherby ; Ind., George Sutton ; Iowa, H. T. Cleaver ; Mich., A. B. Palmer ; D. C., F. Howard ; U. S. A., George A. Otis.

Dr. Catlin moved that the Committee constituted as above meet immediately.

Dr. John L. Atlee moved that a committee of seven be appointed to represent the Association at the next meeting of the Canada Medical Association at Montreal.

Dr. Mayberry nominated the President as one of said delegates, all of which were adopted.

The resolution offered by Dr. Bowditch was then declared in order. The text of which was as follows :

Resolved, That the question of sex has never been considered by this Association in connection with consultations among medical practitioners, and that, in the opinion of this meeting,

every member of this body has a perfect right to consult with any one who presents the only "presumptive evidence of professional abilities and acquirements" required by this Association, viz: "a regular medical education."

Dr. Washington L. Atlee advocated the spirit of the resolution in an animated manner. He referred to the powers of endurance in the female as exemplified in the sick-room, on the operating table, etc. The main question, however, was the justice of excluding woman from any honorable pursuit or avocation, on account of sex alone. The objection that she was uneducated was urged. Why was she uneducated? Simply because she was debarred the privilege of admission into the medical schools.

In Philadelphia, said the speaker, he might consult with the most ignorant of his own sex, belonging to the regular profession, but not with the most educated of the opposite sex, with every other qualification.

Irregularity in their mode of practice was at first urged as the main objection against the recognition of the claims of female practitioners. This objection does not now, in several instances, exist.

He referred to the familiar instances of Mme. Bovin and Mme. La Chapelle of France, in support of woman's competency to practice the healing art. What may be allowed abroad may be allowed in a country where the institutions were supposed to be more liberal.

Dr. Condie believed that if the females were to confine themselves to their own sphere, they would have quite enough to do.

That since the time of Lupina, a graduate of the University of Halle, in the time of Frederick the Great, there had been notable exceptions to the rule of a general unwillingness on the part of the sex to assume the responsibilities and exactions of the profession. As a matter of history, he stated that the lady in question studied as a male under the name of Lupinus, and did not reveal her sex until after the reception of her diploma.

He deprecated the passage of any law intended to govern the usage of the profession. The matter should be left to the judgment and sense of propriety of the individual.

Some held the view that females shall be let alone; but as he happened to have some interest in the sex, he was opposed to this doctrine. He concluded by hoping that the subject should not be officially noticed. The more it was discussed, and the greater the opposition, the more decided would be the sympathy in favor of this class of practitioners.

Dr. Davis maintained that the Code of Ethics offered no impediment to consultations on the score of sex alone. The question was left an open one. He denied the right of any local society to force the association into any expression of opinion upon the subject, particularly when any enactment must partake of an *ex post facto* character. He advocated the broadest equality; if a woman thought that she could do better in the performance of duties allotted by general consent to the male, and the male was inclined, for similar reasons, to assume those of the household, he for one would not object.

On motion of Dr. Davis, the whole question was indefinitely postponed by nearly a unanimous vote.

Dr. John L. Atlee moved the reconsideration of the vote which referred the resolution concerning the case of Dr. Julius Homberger to the Committee on Medical Ethics, and after some considerable discussion, Dr. Homberger was ordered, by a decided vote, to be expelled from the Association.

Dr. Hartman, of Maryland, submitted some resolutions on the subject of Professional Advertisers, which, after some discussion, was referred to the Committee on Ethics; after which the Convention adjourned until Thursday, 9 A. M.

THIRD DAY—THURSDAY, MAY 7, 1868.

The Association was called to order at 9 A. M., the President, Dr. Gross, in the Chair. Minutes of the preceding meeting were read and approved.

Reports of the Committee on Publication and the Treasurer were read and accepted.

The Report of Committee on Nominations was declared in order, and after a brief debate, the same was accepted and adopted. Place of meeting—New Orleans, La. Time—May. President, Wm. O. Baldwin, of Ala.; 1st Vice-President, Geo.

Mendenhall, Ohio; 2d Vice-President, N. Young, D. C.; 3d Vice-President, N. P. Monroe, Me.; 4th Vice-President, S. M. Bemis, La.; Treasurer, Casper Wistar, Philadelphia.

Committee on Publication.—Francis G. Smith, Jr., Philadelphia, Chairman; Wm. B. Atkinson, Phila.; H. F. Askew, Del.; Richard M. Cooper, N. J.; J. H. Lovejoy, D. C.; Wm. Mayberry, Pennsylvania.

Dr. Brinsmade, of New York, offered the following in behalf of New York State Medical Society :

Resolved, That the chairman of the delegates from this Society to the American Medical Association be requested to present to said Association, as the desire of the Medical Society of the State of New York, the following resolution, and to urge its adoption :

Resolved, That the Faculties of the several Medical Colleges of the United States be recommended to announce explicitly in their annual commencement circulars and advertisements, that they will not receive certificates of time of study from irregular practitioners, and that they will not confer *the degree* upon any one who may acknowledge his intention to practice in accordance with any exclusive system, which was adopted.

Dr. Brinsmade, as a member of the delegation from the Association to the International Medical Convention at Paris, reports that they were engaged in the preparation of a detailed account of their visit. This would be submitted in due time to the appropriate committee for publication in the Transactions.

Dr. C. C. Cox, of Maryland, offered the report of the Necrological Committee, giving the names of the decedents.

Dr. Condie moved that the report be retained by the chairman sufficient time for additions, but without delaying the publication, which was adopted.

The following voluntary papers were referred to the several sections as below designated :

"Investigations upon Pyæmia, with observations upon associated diseases, supervening upon gun-shot wounds." By Dr. Joseph Jones, Tenn. Referred to Section on Surgery and Anatomy

"Albinism in the Negro Race," by same author. Referred to section on Physiology.

"A safe and effectual operation for the radical cure of Varicocele." By Dr. Paul F. Eve, of Tenn. Referred to Section on Anatomy and Surgery.

"A case of the extirpation of a scirrhus uterus *in situ*." By Dr. A. B. Jones. Referred to same section.

"A new remedy for amenorrhoea." By Dr. John P. Garrish, of New York. Referred to Section on Obstetrics and Practical Medicine.

"Report of Committee on the cultivation of the cinchona tree in the United States." Dr. J. M. Toner, chairman. Referred to Section on Materia Medica.

The Special Committee appointed for the consideration of the topics of the President's Inaugural Address, and instructed to reduce their suggestions to the form of resolutions, reported as follows :

1. *Resolved*, That the Publishing Committee are hereby invested with plenary power in regard to all papers not read before the Association or in the sections, to publish or not, as may seem expedient.

2. *Resolved*, That a committee of three be appointed by the Chair to take into consideration the subject of appointment of a commissioner in each judicial district or circuit, whose duty it shall be to aid in the examination of witnesses in every trial involving medico-legal testimony, and to report at the next meeting of the Association.

3. *Resolved*, That a committee be appointed to report next year in regard to the subject of an annual register of the regular profession in the United States, and in the meantime to take necessary measures to carry the plan into effect.

4. *Resolved*, That a committee be appointed to take into consideration the subject of the best mode of providing a fund for the relief of widows and orphans of deceased physicians, and report to the Association at the next meeting.

5. *Resolved*, That a committee of three be appointed to take into consideration the subject of the establishment of veterinary colleges, and report at our next meeting.

6. *Resolved*, That all hospitals and public institutions for the care and treatment of the sick should have educated, well-trained nurses only; that this Association would strongly recommend the establishment in all our large cities of nurse-training institutions.

The resolutions were debated *seriatim*, and resulted in the adoption of all except the sixth, which was referred to a committee.

Dr. McKew, of Maryland, offered the following as bearing particularly upon the first of the above resolutions :

Resolved, That the committee shall, in carrying out these resolutions, not subject the Association to any expense.

COMMITTEES APPOINTED.

The Chair, agreeably to requirements of the resolutions in question, appointed the following committees :

Commissioners to aid in Trials involving Scientific Testimony.—Drs. John Ordronaux, of New York; A. B. Palmer, of Michigan; Stephen Smith, of New York; J. W. Dunbar, of Baltimore.

Annual Medical Register.—Drs. John H. Packard, of Philadelphia; Wm. B. Bibbins, of New York; and Ellsworth Eliot, of New York.

Devising a Plan for the Relief of Widows and Orphans of Medical Men.—Drs. J. H. Griscom, of New York; N. S. Davis, of Illinois; and A. C. Post, of New York.

Veterinary Colleges.—Drs. Thomas Antisell of Washington, D. C.; C. A. Lee, of New York; and John C. Dalton, of N. Y.

Dr. Hibberd moved that the Committee on Nurse-training Institutions consist of Drs. S. D. Gross, Elisha Harris, and Chas. A. Lee.

Dr. Howard, of Maryland, submitted the following :

Resolved, That a committee of three be appointed to report at the next annual meeting of the Association, on the subject of Specialties in Medicine, and on the propriety of specialists advertising.

On motion, adopted.

Dr. Baldwin, of Alabama, the newly-elected President of the Association for the current year, was introduced to the Association, and returned his thanks for the compliment in appropriate terms. He adverted briefly to the unfortunate dissensions which had existed between his section and the North, and congratulated the Association and himself that these differences had been settled, at least so far as the medical profession were concerned, and that now we could again meet together as brothers and friends. He hoped that harmony and good-will would hereafter prevail for the general good of the country and the welfare of the profession.

At the close of Dr. Baldwin's remarks, the retiring President, Dr. Gross, arose and said that he desired to correct a misapprehension which existed in the South, that the Medical Association had adopted at one of their sessions, held during the war, a resolution requesting the United States Government to pass a

law making all medicines and surgical instruments contraband of war. No such resolution had ever been adopted.

Dr. Davis desired to say, in addition, that not only had no such resolution ever been adopted, but that it had never been introduced.

This statement was, on motion, ordered to be recorded in the Transactions of the Association.

Dr. Melvaine, of Ohio, then called attention to a preparation to restore the normal color of animal tissue, a discovery of Mons. Brunetti, of Padua, Italy. He has not yet published the steps of the process, although he has announced his intention so to do. The Doctor, in connection with his remarks, exhibited a small specimen.

Dr. Davis reported that the Committee on Medical Rank in the Navy had waited upon the proper Congressional committee, and properly presented the subject to their notice.

The Committee as at present constituted, was, on motion, continued for one year longer.

Dr. Davis also called for the report of Committee on Place of Deposit of the Archives of the Association. After some explanatory remarks, the Committee was, on motion, continued.

Dr. Bibbins, of New York, offered a resolution, substantially calling for the appointment of a sub-committee in all the large cities to act in conjunction with the General Committee of Arrangements. The duty of this Committee was to obtain a reduction of railroad fare, if practicable.

On motion, the Permanent Secretary was empowered to make appointments to said Committee.

Dr. Davis offered a resolution, instructing the Chair to appoint a committee of three, to report at the next session on the practicability of establishing a library of American medical works, including books, monographs and periodicals. Adopted.

The Association then adjourned till 9 o'clock Friday morning.

FOURTH DAY—FRIDAY, MAY 8, 1868.

The Association met at the appointed hour, the President in the chair. The minutes of the preceding meeting were read and approved.

Dr. Henry A. Martin, of Mass., offered the following, which was adopted :

" It seems proper that this Association should not be without a committee on a subject so transcendently important as that of vaccination ; therefore,

" *Resolved*, That a standing committee of one be appointed upon the whole subject, to report from time to time on such topics connected with vaccination as shall, in the estimation of such committee, appear of chief practical interest and importance to the profession.

Committee—Dr. H. A. Martin, of Massachusetts.

The Committee on Nominations made the following additional report, which was adopted :

Assistant Secretary.—Dr. A. G. Semmes.

Committee of Arrangements.—Drs. J. G. Richards n, S. M. Bemis, C. Beard, L. T. Pimm, D. Warren Brickell, S. Chopin and — Mitchell, all of New Orleans.

On Medical Education—Drs. J. C. Reevo, Dayton, Ohio ; J. S. Hildreth, Chicago ; W. C. McCook, Pittsburg, Pa. ; Frank Rice, Memphis, Tenn. ; and S. H. Pennington, Newark, N. J.

Committee on Necrology.—Drs. S. S. Cox, Md ; E. B. Stevens, Ohio ; W. F. Peck, Iowa ; H. Van Dusen, Wis ; J. M. Toner, D. C. ; Jos. Simpson, U. S. Army ; J. C. Weston, Maine ; Henry Bronson, Conn. ; Henry Noble, Ill. ; Charles Eversfield, U. S. Navy ; T. Parvin, Ind. ; J. C. Hupp, West Va ; J. Mauran, R. I. ; D. Clark ; J. M. Keller, Tenn. ; Henry F. Askew, Del. ; H. J. Clark, Mass. ; E. M. Moore ; John Shrady, N. Y. ; Charles A. Logan, Kansas ; — Stewart, Minn. ; Henry Miller, Ky. ; F. G. Armour, Michigan ; John Blaine, N. J. ; A. Fleming, E. Wallace, Pa. ; R. D. Arnold, Ga. ; J. S. Weatherly, Ala. ; S. L. Welch, Texas ; T. M. Logan, Cal. ; John W. H. Baker, Iowa ; P. A. Stackpole, N. H. ; L. Joynes, Va ; W. Brickell, La. ; David Bqoth, Miss..

Committee on Literature.—Drs. E. Warren, Baltimore ; J. Jones, Nashville ; E. Andrews, Chicago ; J. J. Woodward, U. S. Army ; P. S. Wales, U. S. Navy.

On the Climatology of their several States.—Drs. J. C. Weston, Mo. ; P. A. Stackpole, N. H. ; Henry James, Vt. ; H. I. Bowditch, Mass. ; C. W. Parsons, R. I. ; E. K. Hunt, Conn. ; W. T. Thomas, N. Y. ; Ephraim Hunt, N. J. ; D. F. Condie, Pa. ; O. S. Mahon, Md. ; J. Harris, Ga. ; George Engleman, Mo. ; R. F. Michel, Ala. ; T. J. Heard, Texas ; R. C. Hammell, Ill. ; J. F. Hibbard, Ind. ; T. Antisell, D. C. ; J. C. Hughes, Iowa ; A. Sagur, Mich. ; T. L. Neal, Ohio ; F. W. Hatch, Cal. ; B. W. Avent, Tenn. ; E. A. Hildreth, W. Va. ; W. C. Owen, Va. ; Sam-

uel Wiley, Minn.; L. B. Bush, Del.; G. W. Lawrence, Ark.; — Compton, Miss.; Louis Pimm, La.

Committee on Prize Essays.—S. M. Bemis, J. Scott, W. Brickle, S. A. Smith, C. Beard.

Special Committee on Alcohol and its Relations to Medicine.—John Bell, Baltimore; J. R. Dunbar, Philadelphia; and Richard McSherry, Baltimore.

On Cryptogamic Origin of Disease, with special reference to recent Microscopic Investigations on that Subject.—Dr. Curtis, U. S. Army.

On Diseases of the Cornea.—Dr. J. S. Hildreth, of Chicago.

On Excision of Joints for Injuries.—Dr J: B Read, of Savannah.

They also reported the following resolution, which was adopted.

Resolved, that those gentlemen who desire to report on special subjects, and will pledge themselves to report at the next meeting, be requested to send their names and the subjects they desire to report upon to the Secretary of the Association.

Dr. Charles A. Lee, of New York, was appointed a delegate from the Convention to the meeting of superintendentes of insane asylums.

Dr. J. Shrady, of New York, read the minutes of the Section on Surgery and Anatomy. Adopted and ordered to be published in the Transactions.

Dr. Davis, of Illinois, read the minutes of the section on Meteorology, Medical Topography and Epidemic Diseases. Adopted and ordered as above.

Dr. Atkinson, of Pennsylvania, presented the minutes of the section on Practical Medicine and Obstetrics, which, on motion, were ordered as above.

Dr. Hibberd, of Indiana, made a verbal report concerning the Section on Medical Jurisprudence, Hygiene and Physiology.

He stated that the section, after a careful examination of the contribution by Dr. Joseph Jones, entitled "Albinism in the Negro Race," recommend that, in view of its great excellence, it be submitted to the Smithsonian Institution for publication.

The report was, on motion, accepted.

Dr. Davis offered the following, which was unanimously adopted:

Resolved, That hereafter the necessary expenses for rent of

hall for general meetings and rooms for Sections to accommodate their annual meetings, and the necessary expenses for cards of membership, be paid out of the Treasury of the Association.

The following was also adopted :

Resolved, That a committee of three be appointed on *The Use of Prophylactics in Zymotic Diseases*.

The Chair appointed Dr. Nelson L. North, of New York, Chairman of said Committee.

The following was also offered and adopted :

Resolved, That a committee be appointed by the Chair, on the *Utilization of Sewerage of Cities*, to report at next session of Association.

Dr. Elisha Harris, of New York, was accordingly appointed Chairman of said Committee.

Dr. Harris, of New York, submitted the following, which was likewise adopted :

Resolved, That a committee of three be appointed by the President, on the subject of the *Sewerage and Drainage of Cities, Towns and Malarious Districts of Country*, to report at the next meeting of the Association.

Committee.—Dr. Stephen Smith, of New York, Chairman.

On motion, the subjoined was adopted:

Resolved, That a committee be appointed by the Chair, on the subject of *Inebriate Asylums*, to report at the next meeting of the Association, and that Dr. C. H. Nichols, of the Government Hospital for the Insane, be Chairman of said Committee.

Dr. Thomas Antisell, D. C., was, on motion, appointed Chairman of the Committee "on the influence of the Pneumogastric nerve on spasmodic and rhythmical movements of the lungs."

The President appointed the following gentlemen as delegates to foreign medical societies: Samuel J. Jones, of Chicago; G. C. Blackman, of Cincinnati; Fordyce Barker, of New York, to which committee Dr. Gross, President of the Convention, was added.

Dr. Bliss, of Washington, introduced the following:

Resolved, That a committee of three be appointed to examine into the present plan of organization and management of the United States Marine Hospital, and report at the next annual meeting of this Association.

The President read a letter from Hon. George Bancroft, our

Minister at Berlin, relative to Professor A. Ehrenberg, the great microscopist, who is now blind. On motion, Dr. Gross, the President, was authorized to send a letter on behalf of the American Medical Association.

Dr. Wetherly, of Alabama, then addressed the Convention in the following terms :

MR. PRESIDENT AND GENTLEMEN OF THE ASSOCIATION—I rise on the part of the Southern delegation of the Southern profession, to extend a warm and pressing invitation to the Association to visit us in large force at New Orleans, next May; thereby giving us an opportunity of returning, in some measure, that great kindness and generosity that have been shown us. Since we have been here, I have no hesitation in speaking for the New Orleans physicians, and will say for them, that you will be received by them with open arms, and as warm a welcome as you have ever received at any other point in the Union.

The retiring President, Dr. Gross, then arose and spoke as follows: Before the question of final adjournment be put, allow me to tender you my cordial acknowledgments for the kindness and courtesy which you have extended to me as your presiding officer. Gratitude and good taste alike prompt the expression of my feelings. In everything I did I felt that I had your generous support and sympathy; whatever errors may have been committed were errors of the head and not of the heart, and are, I am sure, already forgotten by you. I congratulate you upon the manner in which you have conducted your proceedings. It is questionable whether there ever was a deliberative body of such magnitude in which there was so little discord, or so little said and done of an objectionable character; harmony, cordial and complete, prevailed from the beginning to the end. There was indeed not one word uttered that any one, even the most fastidious, might wish to recall; a circumstance the more surprising when it is recollected that men in the heat of debate often give way to heedless and unguarded expressions calculated to ruffle the feelings and engender unpleasant reminiscences. We have accomplished not a little work, and above all we have had an opportunity of reviving friendly feeling; of extending our acquaintance with each other, and of interchanging sentiments in regard to matters of vital importance to our beloved profession. I am sure that every one will say, as he leaves this hall that it was good for him to have been here, and that he will return to his home with new resolves and determine to devote himself more earnestly than ever to the advancement of the glory of his noble calling; that he will strive more than ever to elucidate its great principles, and that, abandoning all other pursuits, he will worship medicine as the only goddess of his

idolatry. Hoping that no evil may befall you on your homeward journey, and that your families may greet you with messages of peace and glad tidings, I bid you a cordial and affectionate farewell.

The customary votes of thanks having been passed, the Convention adjourned *sine die*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

THE VARIATION OF ANIMALS AND PLANTS UNDER DOMESTICATION. By CHARLES DARWIN. Authorized edition, with a preface by Prof. Asa Gray—in two volumes, with illustrations. New York: Orange Judd & Co.

This last work of Mr. Charles Darwin, whose name has come to be one of world-wide significance in connection with the origin and variation of species, is one of exceeding interest at the present time. Many of our readers are familiar with the work of Mr. Darwin, entitled "The Origin of Species." In that volume Mr. Darwin unfolded the theory with which his name is specially identified, of the origin of different species of plants and animals, not by means of independent creations, but by means of what he terms "Natural Selections." From a variety of facts collected, he deduced the conclusion that, originally, the varieties of species among animals were very few in number, but that in process of time nature herself, by means of various circumstances, influences and conditions, and by the aid of animals themselves, has been developing new species. The object of the present work is, however, more to show the effect of domestication on the various animals and plants that come under the dominion of man, and the facts observed and verified by Mr. Darwin's experiment and observations will be surprising to those who have never given a thought to these subjects. Besides, they have a practical value, for they show to breeders of all descriptions of animals and plants, of horses, cattle, swine, pigeons, fowls, fruit trees and flowers, that to a remarkable extent they have it within their power to modify, change and improve all these breeds. We can not do better than to quote Professor Gray, in the preface to this edition, who describes it as "a perfect treasury of facts, relative to domesticated animals, and some of the more

important cultivated plants; of the principle which govern the production, improvement and preservation of breeds and races; of the laws of inheritance upon which all origination of improved varieties depends; of the ill-effects of breeding in-and-in, necessary though this be to the full development and perpetuation of a choice race or breed, and of the good effects of an occasional cross, by which, rightly managed, a grade may be invigorated or improved." The work is one of rare value and interest, aside from its practical relations, as a compendium of scientific facts, relating to organic life in animals and plants, which can be found equally instructive and interesting to the professional naturalist or physiologist, the breeder of animals and cultivator of plants, and to the general reader.

MAN: WHERE, WHENCE AND WHITHER—BEING A GLANCE AT MAN IN HIS NATURAL HISTORY RELATIONS. By DANIEL PAGE, LL. D., ETC.
New York: Moorehead, Bond & Co. 1868.

The above very interesting work is a brief resume of two lectures delivered to the members of the Edinburgh Philosophical Institute. The author, in a most practical and interesting article, reviews the natural relations of man to other animate beings, and endeavors to show his true place in the scale of animal life as well as his intimate relationship with such animal existence. The work embodies, in a few well chosen words, the principal arguments of the developmental or progressive theory, and in stating the crowning point of this theory that man is the perfection of animal life, and urging, first, as to his present position as an integral part of, and positive relationship to, such animal life, "his present where." Then his origin from, or as a part of, such animal life, "his past whence," and finally that as progress has in all past time been impressed on animated beings, so will it be in the future, thus leaving unlimited all future progress, both mental as well as physical, "his whither." We quote the following from the publishers' notice, in which we fully agree: "This very remarkable book is one which is destined to exert a striking influence on the current of human thought, relative to the Natural History of Man. As bold as Darwin, and treating of a kindred subject, Dr. Page is even more interesting, because he writes upon a topic which more intimately concerns the human race."

ATLAS OF VENEREAL DISEASES. PART III. By A. CULLEVIER, Surgeon to the Hospital du Midi, etc. Translated from the French, with notes and additions, by F. J. BUMSTEAD, M. D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York, etc. With about one hundred and fifty colored figures. Philadelphia: Henry C. Lea. 1868.

We have already expressed the highest commendation of the Parts I and II of this truly grand monograph. We can not too often recommend to our readers the purchase of the work. The difference in opinion concerning the chancre and the soft chancre, as far as they depend on two viruses or one, would offer no impediment to the intelligent reader in the study of venereal diseases; on the other hand, it would be a source of so much more interest in the work, as exhibiting the currents of thought in two minds, both of divided originality, and both influenced in two ways by the same facts and observations. This, Part III, finishes the subject of soft chancre, and introduces the chapter on indurated or true chancre. Let every *non-specialist* place this book in his library.

MATERIA MEDICA FOR THE USE OF STUDENTS. By JOHN B. BIDDLE, M. D., Professor of Materia Medica and Therapeutics in the Jefferson Medical College, etc. Third edition, enlarged, with illustrations. Philadelphia: Lindsay & Blackiston. 1868.

This work, of 359 pages of reading matter, does not pretend to any higher claim than a text book for medical students, to whom it is dedicated. The descriptions of the various medicines, though short, are correct, and the numerous wood-cuts interspersed make the work altogether sufficiently valuable to be possessed by the student in his attendance upon lectures. Of course it does not approach the larger works on this subject; but we can not expect that the student will want in the first years of his career any more thorough work than this.

The work may be obtained at reasonable price of the St. Louis News Company, on Fourth and Pine.

PATHOLOGICAL ANATOMY OF THE FEMALE SEXUAL ORGANS. By JULIUS M. KLOB, M. D., Professor at the University of Vienna. Translated by J. KAMMERER, M. D., and BENJ. F. DAWSON, M. D. New York: Moorhead, Simpson & Bond, Publishers. 1868.

This work is valuable, particularly as it places within easy reach the information on the pathology of the uterus, which is usually given in every work on Gynecology. It is a late work, and faithfully gives us the latest views on this subject, besides

the observations of the author, which, in many cases, lay claim to originality.

The subject is treated under the general head, Anomalies of the Uterus. The subdivisions of Anomalies of Formation and Nutrition lead very naturally to the quantitative and qualitative alterations which are exhibited in the great variety of uterine diseases. The work concludes with a section on Puerperal Affections of the Uterus.

The literature to which the author refers is very extensive, and we may feel confident, even if not otherwise acquainted with his reputation, of the very thorough manner in which the whole subject has been investigated.

The work is on sale at the book store of the St. Louis News Company.

THE INDIGESTIONS OR DISEASES OF THE DIGESTIVE ORGANS FUNCTIONALLY TREATED. By THOMAS KING CHAMBERS, M. D. Second American edition. Philadelphia: Henry C. Lea. 1868.

Dr. Chambers' work has had a most favorable reception in this country, one large edition having, in a few months, been exhausted, and the present called for. It has already received the very highest commendations of the medical press, and we can only reiterate our very earnest approval of the book. It should be read by every practicing physician, as the subject treated is of every day occurrence, and simple, as it may seem, really requires our most earnest solicitude.

NEW OPERATIONS ON THE EYE.—M. de Graefe took occasion to communicate three new surgical operations with their procedure. The *first* has for its object the *section of the optic nerve*, in cases of remaining subjective luminous sensation, in particular affections, to the loss of the eye, and the occasion of deep troubles in the life of the patient. The *second* consists in the *partial tenotomy of the elevator of the upper eyelid*, in Bando's disease. The *third* concerns the most recent modifications practiced by the learned professor in his *method of linear extraction of cataract*. This modification consists in the suppression of every tractor for evacuating the crystalline. Since the introduction of this modification, the number of cases of proclivencia of the vitreous body has been diminished, in the proportion of from 14 in 100 to 3 in 100.—*Gazette Hebdom.*

MEDICAL REPORTER.

ST. LOUIS, JUNE 15, 1868.

The St. Louis Medical College.—By reference to our advertising sheet, it will be seen that the annual advertisement of this well-known Medical College appears for the coming winter session; also, for the convenience and information of our friends, we issue with the present number the annual circular and catalogue. Those who may not receive directly a copy of this circular, are advised that it may be obtained by communicating with the Dean or any member of the Faculty.

This College stands prominent among the many medical institutions of the West; its curriculum of study is as complete as others; its two sessions, winter and summer, cover as ample a time as may be desired by the friends of medical progress; and its superior clinical advantages, having under exclusive medical control two hospitals, which are visited daily, besides the other institutions of this class, for which St. Louis is noted, give an unquestioned superiority, which students are not slow to appreciate. From the present size of the summer class, which, as the season advances, is constantly increasing; the prospects are that the coming winter session will open upon a larger assembly of students than has ever been seen within the walls of this Institution.

New Sydenham Society Publications.—Lindsay & Blakiston, Philadelphia, having made arrangements with the Hon. Local Secretary, Richard J. Dunglison, M. D., by and with the approval of the Society's Agent in London, to act as Agents in the United States for the publications of the New Sydenham Society, announce that they are now prepared to receive subscriptions for the year 1868, at ten dollars, payable in currency and invariably in advance, and to furnish any of the previous years at the same rate and on the same terms.

The practical character and permanent value of these publica-

tions, and the very low price at which they are furnished, commend them to the favorable attention of the medical profession in the United States. Four volumes will be issued for 1868. Subscribers at a distance can have the volumes as they appear forwarded to them by mail, upon remitting, in addition to the subscription, fifty cents per volume for the postage, which must be paid in advance, by express at their expense, or in any other way they may direct. Reports of the Society, containing full titles, &c., of the works published, will be furnished free upon application to Lindsay & Blakiston, Medical Publishers and Booksellers, No. 25 S. Sixth street, Philadelphia.

Medical College in Detroit.—The physicians connected with the Harper Hospital, and the public-spirited and wealthy citizens of the city, are engaged in the establishment of the Detroit Medical College. The enterprise will doubtless prove a success, as those engaged in the effort are earnest and successful in their undertakings. Its professorship, will, we learn, be filled for the most part by Detroit men. Dr. S. G. Armor, Dr. E. W. Jenks, Dr. T. A. McGraw, Dr. G. P. Andrews, Dr. D. O. Farrand and Dr. S. P. Duffield are all spoken of in connection with certain departments of instruction. Other resident physicians will probably be invited to fill chairs in the college.

American Journal of Obstetrics.—The first number of the American Journal of Obstetrics has been received. It is edited by E. Næggerath, M. D., and B. F. Dawson, M. D., and published by that enterprising house, Morehead, Bond & Co., proprietors of the Agathinian Press, New York. It contains several original articles, one each by Prof. T. Gaillard Thomas and Prof. H. R. Storer. Judging from the first number, we predict that it will become a popular work and be a valuable addition to medical journalism. We extend to the editors our warmest welcome and congratulations. We recommend the work as well worthy the patronage of the profession.

The American Naturalist.—We earnestly call the attention of our readers to this excellent work. It comes to hand monthly, laden with articles of interest and usefulness, not only to the scientific and professional man, but especially so to the agriculturist and fruit grower, as to them it is of practical value. It has done more to popularize science than any work ever published in the United States, and we can freely say that no better book for a family of growing children and young folks can be placed before them. Subscription price \$3 00 per annum. See notice in Advertising Department of the *MEDICAL REPORTER*.

VITAL STATISTICS OF ST. LOUIS.

For the month of May, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	149	Still Born.....	32
White Females.....	109	Under five years of age.....	121
Colored Males.....	16	Between five and twenty years...	29
Colored Females.....	13	Between twenty and forty years.	68
Born in the United States.....	217	Between forty and sixty years....	53
Born in Germany.....	49	Between sixty and eighty years..	14
Born in Ireland.....	36	Bet. eighty and one hundred y'rs	2
Born in other countries.....	17	Total.....	319

DISEASES.

Abscess.....	2	Fever Puerperal.....	1
Albuminuria.....	3	Fever Typhoid.....	16
Apoplexy.....	3	Fracture.....	1
Asthma.....	1	Gangrena.....	2
Atrophy.....	2	Gastritis.....	2
Bronchitis.....	5	Hemorrhage.....	2
Burns.....	1	Hepatitis.....	1
Cancer.....	4	Hydrocephalus.....	3
Carditis.....	4	Hydrothorax.....	2
Cerebritis.....	2	Inflammation.....	2
Convulsions.....	20	Labor.....	2
Congestion of Brain.....	10	Laryngitis.....	1
Congestion of Lungs.....	4	Malformation.....	2
Croup.....	2	Marasmus.....	6
Debility.....	3	Meningitis.....	9
Dentition.....	3	Paralysis.....	5
Delirium Tremens.....	2	Peritonitis.....	6
Disease of the Heart.....	6	Portusis.....	2
Diarrhœa.....	8	Phthisis.....	43
Diphtheria.....	2	Pneumonia.....	35
Dropsy.....	5	Rheumatism.....	2
Drowned.....	1	Rubeola.....	2
Dysentery.....	10	Scalds.....	1
Eclampsia.....	1	Suicide.....	1
Enteritis.....	4	Syphilis.....	3
Erysipelas.....	5	Tetanus.....	3
Fever Congestive.....	4	Trismus.....	4
Fever Intermittent.....	6	Ulceration.....	2
Fever Remittent.....	2	Wounds.....	1

Total number of Deaths for May, 1866.....375

Total number of Deaths for May, 1867.....326

Total number of Deaths for May, 1868.....319

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

VOL. III.

ST. LOUIS, JULY 1, 1868.

No. 9

INDIGENOUS REMEDIES OF THE SOUTHERN STATES, WHICH
MAY BE EMPLOYED AS SUBSTITUTES FOR SULPHATE OF
QUININE IN THE TREATMENT OF MALARIAL FEVER.

By JOSEPH JONES, M. D., of Nashville, Tenn.

SUMMARY—ORIGIN AND OBJECTS OF PRESENT PAPERS.

During the recent war, when the ports were blockaded, and all commercial intercourse cut off from those countries and American States, from whence the South had received her supplies of medicine, it was deemed important—nay, absolutely necessary—that the indigenous remedies should be carefully examined. The employment of large armies in low, malarious regions necessitated the consumption of large amounts of quinine, and the question of its supply became one of most serious moment in the beleaguered Confederacy.

The following paper was prepared during the early periods of the war, in 1861, with the design of advocating and aiding the substitution, as far as practicable, of the indigenous remedies for the uncertain supplies of quinine.

The value of this inquiry we conceive has been in no manner lessened by the results of the recent war.

As each plant is passed in review, we shall give—

1. Botanical Characters.
2. Geographical Distribution.
3. Chemical Constitution and Relations—Active Principles—
Mode of Preparation.
4. Therapeutical Properties and Applications.

NO. 1.—GEORGIA BARK (PINCKNEYA PUBENS.)*

Its affinities with Peruvian Bark—Geographical distribution—Active alkaloid principle—Medicinal properties—Use of by the Inhabitants of Georgia in the treatment of Intermittent Fever—Testimony of Dr. John Stevens Law, of Sunbury, to its efficacy as an antiperiodic—Method of using it—Experience of Confederate surgeons with Georgia Bark.

Botanical Character.—Capsule two celled, bearing the partition in the middle of the valves; corolla tubular; calyx, with one or two segments resembling bractæas; filaments inserted at the base of the tube; seed winged.

A large shrub, fifteen to twenty feet high, with many stems from each root; branches branched, the younger tomentose; leaves opposite, large, lanceolated, entire, slightly acuminate, shining on the upper surface, though sprinkled with hairs, tomentose on the lower; petiole about an inch long, tomentose; panicles terminal and axillary, composed of fascicles, commonly five flowered; calyx superior, five parted, persistent, slightly colored; segments sometimes equal, lanceolated, and acuminate; frequently one, and sometimes two, segments, dilate into a large, ovated, velvety, rose-colored leaf. When two segments dilate they are never equal in size. Corolla tubular; the tube of an obscure, green color, tomentose; border five parted; segments oval, obtuse, purple; filaments inserted into the base of the corolla, longer than the tube; anthers incumbered; two celled; germ turbinate; style shorter than the stamens; stigma obtuse; capsule nearly globose, opening at the summit across the dissepiment; seeds flat, orbicular, attached to a central receptacle. This genus is very nearly allied to chincona. It differs in its calyx, but principally by the transverse partitions of its capsule. Flowers May—June.—ELLIOTT—*A Sketch of the Botany of South Carolina and Georgia*, vol. 1, pp. 268–269.

Geographical Distribution.—This small tree, interesting not only by the elegance of its flowers and foliage, but also by its close affinity to the celebrated genus cinchona, which yields the Peruvian bark, and by the valuable medicinal properties of its bark, is indigenous, and confined to the most southern parts of the Southern States. It grows in wet and boggy soils, along the small streams which intersect the pine barrens, from New River, South Carolina, along the sea coast into Florida. I have found it in greatest abundance in the “branches” of Walthonville, in Liberty county, Georgia, where it is found in company with the elegant Buckwheat tree (*Mylocarium ligustrinum*—*Pursh*); several species of *Andromeda* (*Andromeda angustifolia*—*Pursh*; *A. catesbæi*—*Walt*; *A. acuminata*); *Hypericum fasciculatum*, Poison bush (*Rhus vernix*); *Tupelo* (*Nyssa aquatica* and *N. grandidentata*); *Black Gum* (*Nyssa sylvatica*); *Red Maple* (*Acer rubrum*); *Cypress* (*Capressus distichia*); *Small Magnolia* or *Sweet Bay* (*Magnolia glauca*); *Loblolly Bay* (*Gordonia lasian-*

*Named by the Elder Michaux in testimony of his gratitude and respect to Charles Cotesworth Pinckney, of South Carolina, an enlightened patron of the arts and sciences, from whom Michaux received multiplied proofs of benevolence and esteem during his residence in South Carolina. First discovered by Burtram, who considered it a species of *Mussenda*. Found for the first time by the Elder Michaux in 1791, on the banks of the St. Mary.

thus); Red Bay (*Laurus carolinensis*); Sweet Gum (*Liquidambar styraciflua*), and Water Oak (*Quercus aquatica*.) The branches which intersect the pine barrens of Georgia are capable of supplying large quantities of this important medicinal plant, and with care and the assistance of cultivation they might be made to yield sufficient bark to supply the entire country. If this plant fulfills its high promise, these barren and now valueless regions of country will yield one of the most valuable remedies.

Chemical and Therapeutical Properties.—The inner bark of the pinckneya pubens is extremely bitter, and appears to partake of the febrifuge virtues of the Peruvian bark. Mr. Van, an able chemist, of Philadelphia, many years ago instituted an analysis of this bark, which, although, by unforeseen accidents, was not as satisfactory as he would have wished it, still led to the discovery of a crystallizable substance which resembled cinchonia. Previous to the extensive introduction of bark and quinine the inhabitants of Georgia and Carolina employed it successfully in the treatment of intermittent fevers.*

Mr. John Stevens Law, of Sunbury, Georgia, in his Thesis for the Degree of Doctor of Medicine, presented to the Faculty of the University of Pennsylvania in the spring of 1825, states that he was induced to try it in intermittent fever from the estimation in which it was held by some of the inhabitants in the neighborhood where he resided.

Mr. Law used it in seven cases of intermittent fever, six of which were very speedily cured by it. He affirms that in no case did it distress much the stomach, though in two cases it was given in the quantity of $\mathfrak{z}\text{i}$ at a dose, after the custom of West Indian physicians.

This bark may be administered in powders, in doses varying from $\mathfrak{z}\text{i}$ to $\mathfrak{z}\text{i}$, according to the severity of the case. It may also be administered in extract, infusion or decoction, made and administered in the same manner as directed for the cinchona.

Michaux states that the inhabitants were accustomed to

* The American Dispensatory, by John Redman Coxe, M. D. Philadelphia. 1830. Page 490.

boil a handful of the bark in a quart of water till the liquid was reduced one-half, and to administer this decoction to the sick.*

During the recent war the Georgia bark was employed in combination with dogwood and wild cherry as a tonic and anti-periodic. In my own hands it proved a valuable tonic; and in several cases of malarial fever, in which I employed it in the form of decoction, it exerted a marked effect upon the circulation, reduced the febrile heat, and induced free perspiration. As far as my experiments extended, its antiperiodic powers appeared to be inferior to those of Peruvian bark.

The Surgeon-General of the Confederate army considered the pinckneya pubens of so much value as a substitute for cinchona bark that he directed the attention of the medical purveyors especially to its collection, as will be seen from the following communication:

CONFEDERATE STATES OF AMERICA, }
Surgeon-General's Office, }
Richmond, Virginia, Oct. 17, 1862. }

_____, *Medical Purveyor, C. S. A.:*

SIR—The pinckneya pubens being the indigenous remedy most highly recommended as the substitute for cinchona bark, it was proposed that it should be collected in sufficient quantities to give it a fair trial in the army. On examination, however, of the remedies thus far collected, it is found that three hundred and seventy-eight (378) pounds is the total amount already secured. As this quantity is considered altogether insufficient for the purpose proposed, you are instructed to give your immediate attention to this matter before the season is far advanced.

Very respectfully, your ob't servant,
S. P. MOORE, Surgeon-General C. S. A.

The only official report upon the value of this remedy which came under our notice during the progress of the war was that of Surgeon A. M. Fauntleroy, Medical Director, Wilmington, N. C., in which the following cases were reported as treated with the *extract* of pinckneya pubens:

Case 1.—L. B. Bynum, private, company A, 2d regiment engineers. Patient has had repeated attacks of fever since September, 1863. Form of fever "tertiana;" hour of expected

* North American Sylva. Vol. 1, p. 181. Philadelphia. 1867.

attack 4 o'clock, P. M. May 25, 1864, 7 A. M., pulse 68; 6 grains (of the extract) administered, and the same ordered every hour. 12 M., pulse 80; slight moisture of surface of body; patient comfortable; complained of no ill-effects from the medicine. 1 P. M., pulse 80; diaphoresis the same; patient quiet; 6 grains given. 2 P. M., 6 grains given. 3 P. M., 10 grains given; pulse 78; diaphoresis profuse; patient restless, but complains only of heat. 3½ P. M., 10 grains given; pulse 76; diaphoresis very profuse.

The paroxysm did not appear. During the night the patient had two very copious, dark evacuations from the bowels. He improved in every respect; his appetite increased in an incredible manner.

He remained well, attending to his ordinary duties, until about ten days ago (5th July), when he was attacked with remittent fever, from which he is now rapidly convalescing. Sixty-eight grains in all of the extract were administered.

Case 2.—Spy, private company B, 10th North Carolina battalion of artillery. Patient strong and robust; has had five attacks of intermittent fever; quotidian form; hour of expected chill 11 o'clock.

June 5, 1864. At 6 A. M. 6 grains of the extract were administered in accordance with the directions given the evening before.

Seven A. M., pulse 64; 6 grains given, and the same dose ordered at 8 and 9 o'clock. 10 A. M., pulse 85; very slight moisture on surface of body. 11 A. M., pulse 92; 10 grains given; no moisture; patient complained that the chill was coming on. 11½ A. M., chill came on at 11:25 minutes, but slight. 12 M., chill has passed off; fever succeeded; pulse 110. The fever lasted two hours and a half, followed by the usual degree of diaphoresis.

June 6. Patient reports himself as "right smart better;" pulse 72. 6 A. M., 6 grains, and the same ordered every hour, which had the effect of breaking the chill and fever; diaphoresis began at 10 o'clock. The patient returned to duty two days after.

Case 3.—Poole, private, company A, 2d regiment engineers. Has had occasional attacks of intermittent fever throughout the winter; form tertiana; time of expected chill 10 o'clock P. M. June 9, 7 A. M., pulse 75; rather weak; 10 grains of extract given. 8 A. M., pulse 80; patient comfortable; 6 grains given. 9 A. M., pulse 90; patient restless; complained of pain in his back. As the pulse had risen so rapidly 3 grains only were given at 10 o'clock. 10 o'clock A. M., chill came on two hours earlier than anticipated; both chill and fever, however, were of shorter duration than usual. June 10, the extract of *pinokneya pubens* was administered in 6 grain doses every second hour during the day.

June 11, 6 grain doses were given every hour, commencing at 6 o'clock A. M., and had the effect of warding off the chill; diaphoresis, as usual, supervened.

From the careful study of these cases, and of others previously reported to the Surgeon-General on the 22d of April, 1864, Dr. Fauntleroy concludes :

That the extract has undoubted antiperiodic properties; still it is too slow in its action to be used as a substitute for the sulphate of quinine.

It has, with one exception, always produced diaphoresis.

Its therapeutical action is principally that of a tonic, and it deserves a position in the front rank of vegetable tonics.

From the tardiness of its action, and its effects upon the vascular system, together with its manifest invigoration of the digestive organs, I am induced to think its energy as an agent is displayed through the organic nervous system.

The facts now presented with reference to this interesting vegetable, which so closely resembles the Peruvian barks, that it has, by several distinguished botanists, been referred to the same genus, are sufficient to excite inquiry, and to lead to the extensive employment of the extract as an efficient and valuable tonic.

From the supposed similarity of this to the cinchona tree, and the supposition that the latter would grow in the same neighborhood as the Georgia tree, I shall devote a few words to that subject.

OBSERVATIONS UPON THE GEOGRAPHICAL DISTRIBUTION OF THE CINCHONA TREE.

Discussion of the possibilities of its introduction and possible cultivation in the United States.

As the subject of the introduction and cultivation of the genus cinchona is being agitated at the present time in the United States and Europe, we condense the following facts from the most reliable sources, relating to the native soil and climate of this most valuable plant :

The celebrated Baron von Humboldt, who is justly regarded as the most scientific traveler that this or any other age has produced, enjoyed superior advantages for the examination of

the cinchona tree as an object of physical or botanical geography. Up to the time of the publication of Humboldt's valuable treatise on the cinchona forests of South America, amongst the numerous writers mentioning the cinchona there were none but La Condamini, Ruiz, Paven and Tea, who themselves had observed this tree in its native forests upon the South American Continent. Only the first of these gives a physical description of this plant; the others, as well as Jacquin and Swartz, who saw the cinchona in the West India Islands, and Vahl and Lambert, who occupied themselves with dried specimens, have merely treated on the natural history and the botanical diagnosis. During Humboldt's stay of four years in South America he had occasion to reside a long time in countries where the cinchona trees are indigenous. M. Bonpland and Humboldt observed them north and south of the equator, in the kingdom of New Granada, betwixt Honda and Santa Fe de Bogota, in the province of Popayan, in the districts of Loxa, on the Amazon river, in the province of Jaen de Bracamoros, and in the northerly parts of Peru. During their abode in the house of Don Jose Celestine Mutis, in Santa Fe, the botanical treasures of that great natural philosopher were opened to these distinguished travelers. In Spain, also, they were enabled to collect, from the editor of the *Flora Peruviana*, in Guayaquil (the harbor of Quito, on the coast of the South Sea), from M. Tafalla, a pupil of Rudy, in the little town of Loxa, from Don Vincente Almedo, royal inspector of the cinchona forests, many interesting accounts respecting objects, which, but for the obliging communications from those friends, would have remained unknown to them. In fact, for sixty years since the time of Joseph de Jussieu, whose observations moreover were never published, no traveling naturalist had preceded Humboldt and Bonpland in visiting the beautiful mountain plains of Loxa.

Favored by these circumstances Humboldt was enabled to speak with confidence upon this difficult subject.

Humboldt has shown that till the year 1772 all cinchona bark was collected in the forests of Loxa, Ayavacu and Jaen de Bracamoros, consequently between the third and fifth degrees of

south latitude, and that only from the year 1772 the medicinal cinchona on the South American continent became used in the Northern hemisphere; which species of cinchona were discovered between the fourth and fifth degrees of south latitude.

Until then none were known in Peru Proper, especially in the mountains situated nearer to Lima, the capital. The vale of Rio Calvas, and the village Ayavaca, in whose neighborhood the *Cinchona Condaminea* grows, famed since the year 1738, belong indeed in a political respect to Peru, but both are situated close to the confines of the districts of Loxa; and the bark of Ayavaca, like that of Jaen, was sold by the name of *Cascarilla fina de Uritusinga*, as well as that which was shipped in Payta.

It was only in 1776 that the real commerce in Peruvian cinchona bark began.

Don Francisco Renquiso discovered near Huanuco, in the mountain San Christoval de Cuchew, the *C. Aitida*, of Rudy, a species very nearly related to the orange-colored one of Mutis (*Cinchona Lancifolia*). The editors of the *Flora Peruviana* visited the beautiful valleys of Tharma, Xauxa and Huamalies, and in 1779 determined the botanical character of the North Peruvian species. Shortly afterwards, medicinal cinchona bark was discovered at almost one and the same time in the most northern and in the most southern parts of South America, in the mountains of Santa Martha, and in the kingdom of Buenos Ayres, near La Pady and Cochalamka.

After the year 1780, therefore, Europe was superabundantly supplied from the ports of Payta, Guayaquil, Lima, Buenos Ayres, Carthagena and Santa Martha, with barks of various medicinal powers. The name of cinchona was often given to barks which, indeed, possess great febrifuge powers, but which are derived from trees which do not even belong to the genus cinchona.

In this connection, an observation by Humboldt upon the pinckneya and two other plants of similar medicinal properties is interesting:

“The very same fruit of the genuine cinchona is also pro

duced by *pinckneya pubens michaux*, a tree which I found cultivated, together with *C. Caribœa*, in the excellent botanic garden of Mr. Hamilton, near Philadelphia. The *pinckneya* grows on Mary's river, in the province of Georgia, and is already described by Bartram, by the name of *Mussaenda Bracteolata*. The medicinal powers for the cure of ague possessed by this plant, nearly allied to the genus *cinchona*, and growing without the tropics, have not yet been investigated. On the other hand, Mr. Walker has shown, in two excellent treatises, that the bark of *cornus florida*, from Virginia, and of *C. Sericea*, from Pennsylvania and South Carolina, and even the tulip (*theliriodendron tulipera*) may be used with advantage in North America as remedies against agues. In the kingdom of New Spain, where hitherto no species of *cinchona* has been discovered, as the curator of the Academical Botanic Garden at Mexico has assured me, the yet undescribed *portlandica mexicana*, discovered by M. Sesse, may supply the place of the *cinchona* bark of Loxa."

According to this observer, almost every species of *cinchona* is peculiar to its own region and to its altitude on the mountainous declivities of the Andes.

The following are the observations of Humboldt upon the geographical distribution of the *cinchona*, recorded under the head of each individual species :

1. *Cinchona Condaminea*.—The *cinchona condaminea*, of Humboldt and Bonpland, grows under the 4th°, south latitude, on the mountainous declivity in the mean altitude, between nine hundred and twelve hundred toises. It requires a milder climate than the orange-colored *cinchona* (*cinchona lancifolia mutis*) from Santa Fe. It is exposed to a mean temperature from 15° to 16° Reaumur, which is about the mean warmth of the Canary Islands.

2. *Cinchona Lancifolia*.—This species, known in Santa Fe by the names of *quinia naranyanda*, *quinquina orange*, or orange-colored bark, loves a rough climate. It grows between the 4th and 5th°, north latitude, on mountainous declivities, from seven hundred to fifteen hundred toises high. The mean temperature of this place of growth is about equal to that of

Rome. It amounts to 13° Reaumur; however, the cinchona trees ascending highest towards the summit of the mountains are mostly exposed to a temperature of from 8° to 9°. During the cold at nights, the thermometer falls in these alpine forests for hours as low as the freezing point; however, as far as fifteen hundred toises high no snow falls in this latitude.

3. *Cinchona Cordifolia*.—This species, called by the common people in New Granada velvet bark, grows under the 4th° of north latitude, in heights betwixt nine hundred and fourteen hundred and forty toises.

4. *Cinchona Oblongifolia*.—Grows under the 5th°, north latitude, in heights from six hundred to thirteen hundred toises, and is particularly common in the neighborhood of Mariquita.

5. *Cinchona Ovalifolia*.—Grows under the 3rd° to the 6th°, north latitude, in heights from betwixt seven hundred and fourteen hundred toises.

6. *Cinchona Brasiliensis*.—The only cinchona which grows on the easterly coast of the South American continent. Nothing decisive is known about the height of its place of growth; but as it has been sent from the neighborhood of the town of Gran Para, at the mouth of the Amazon river, and, as in this region, thence on only low hills found, we are allowed to suppose that this species belongs to the hot regions.

7. *Cinchona Excelsa*.—The only cinchona hitherto discovered on the continent of the ancient world, about whose medicinal properties, however, but little is known. It grows in the mountain chain of the Circars, which runs along the north-easterly coast of the great peninsula of Hindostan.

8. *Cinchona Grandiflora*.—It is fond of warm regions, and descends from the mountains in heights from two and three hundred toises. It grows in regions whose mean temperature is from 18° to 19°.

9. *Cinchona Parvifolia*.—Has the smallest fruit of all the cinchona.

10. *Cinchona Dissimiliflora*.—Grows in heights between two hundred and seven hundred toises in warm regions.

11. *Cinchona Caribæa*.
12. *Cinchona Congi flora*.
13. *Cinchona Cineata*.
14. *Cinchona Floribunda*.
15. *Cinchona Angustifolia*.
16. *Cinchona Brachy Carpa*—Grow well in the West India Islands, and love a temperature of from 17° to 22° R.

17. *Cinchona Corymbifera*.—Native of the Friendly Islands.

In his *Views of Nature* Humboldt gives the following description of the *Cinchona* forests :

“ After having sojourned for a whole year on the ridge of the Andes, or Antis, between 4° north and 4° south latitude, amidst the table-lands of New Granada, Pastos and Quito, and consequently at an elevation varying between eight thousand five hundred and thirteen thousand feet above the level of the sea, it is delightful to descend gradually through the more genial climate of the *Cinchona* or *Quinia* Woods of Loxa into the plains of the Upper Amazon. There an unknown world unfolds itself, rich in magnificent vegetation. The little town of Loxa has given its name to the most efficacious of all fever barks—the *quinia*, or the *cascarilla fina de Loxa*. This bark is the precious product of the tree which we have botanically described as the *cinchona condaminea*, but which (from the erroneous supposition that all the *cinchona* known in commerce was obtained from one and the same tree) had previously been called *cinchona officinalis*. The fever bark first became known in Europe about the middle of the seventeenth century. Sebastian Badus affirms that it was brought to Alcalá de Henares in the year 1632; but, according to other accounts, it was brought to Madrid in 1640, when the Countess de Chinchon, the wife of the Peruvian Viceroy, arrived from Lima (where she had been cured of an intermittent fever), accompanied by her physician, Juan del Vego. The finest kind of *cinchona* is obtained at a distance of from eight to twelve miles southward of the town of Loxa, among the mountains of Uritusinga, Villenaco and Ramisitana. The trees which yield this bark grow on Mica slate and Gneiss, at the moderate elevation of five thousand seven

hundred and fifty-five and seven thousand six hundred and seventy-three feet above the level of the sea, nearly corresponding respectively with the heights of the Hospital on the Grimsel and the pass of the Great St. Bernard. The cinchona woods in these parts are bounded by the little rivulets Tamera and Cochyacá. The tree is felled in its first flowering season, or about the fourth or seventh year of its growth, according as it may have been reared from a strong shoot, or from seed. At the time of my journey in Peru we learned, with surprise, that the quantity of the cinchona condaminea annually obtained at Loxa by the Cascarilla gatherers, or Quinia hunters (*cascarilleros and cacadores de quinia*), amounted to only one hundred and ten hundred weight. At that time none of this valuable product found its way into America; all that was obtained was shipped at Payta, a port of the Pacific, and conveyed round Cape Horn to Cadiz, for the use of the Spanish Court. To procure the small supply of eleven thousand Spanish pounds no less than eight hundred or nine hundred cinchona trees were cut down every year. The older and thicker stems are becoming more and more scarce; but such is the luxuriance of growth that the younger trees, which now supply the demand, though measuring only six inches in diameter, frequently attain the height of from 53 to 64 feet. This beautiful tree, which is adorned with leaves five inches long and two inches broad, seems, when growing in the thick woods, as if striving to rise above its neighbors. The upper branches spread out, and, when agitated by the wind, the leaves have a peculiar reddish color and glistening appearance, which is distinguishable at a great distance. The mean temperature of the woods of the cinchona condaminea varies between 60° and 66° Fahrenheit—that is to say, about the mean annual temperature of Florence or the Islands of Madeira; but the extremes of heat and cold experienced at those points of the temperate zone are more felt in the vicinity of Loxa. However, comparisons between climates in very different degrees of latitude and the climate of the table-lands in the tropical zone must, from their very nature, be unsatisfactory.”

In a memorandum which C. R. Markham submitted to the Indian Government, the ground was taken that it was important that the seeds of the hardy species which grew in New Zealand, and which yielded a large per centage of quinine, should be obtained for propagation in India.

The Quina Districts of the Andes have recently been explored by Mr. Cross.

The Secretary of State made arrangements with Mr. Cross for this purpose. This gentleman accordingly made a tour of the Andes, in which he found dangers and hardships of no ordinary kind, and passed through districts which had not been previously explored, for it appears that even Humboldt, who visited Popayan, did not penetrate many of the forests which were visited in his search for seed.

At the time of receiving his instructions, Mr. Cross was residing near the Red Bark Forests, on a high table land on the western slopes of Chimborazo, at an elevation of ten thousand feet above the level of the sea. From this district he commenced his ascent of the northern shoulder of the Chimborazo, and reached the highest part of the pass, which has an elevation of nearly thirty-five thousand feet.

After passing through districts where barley and potatoes were cultivated, he came upon an edible species of oxalis, and then reached immense tracts of land covered by a *stipa*, which, with gentians, *chuquiragua*, *insignis*, and other plants of the order compositæ, ran up to the very verge of perpetual snow. Passing along a wall hedged on both sides by monstrous specimens of *Agave Americani*, he comes to the snow-covered cone of the volcano Cotapaxi, from which a perpetual rumbling noise is heard, and which sends up flame to a height of one thousand feet above the summit of the crater. Mr. Cross next passed the borders of the Suguna de San Pablo, which was surrounded by tumuli, some of which were of the extraordinary height of four hundred feet, and thence to the plains of Triquerres, which, at a height of ten thousand five hundred feet, produces a *Barna-*

desia, with white flowers, and where a dwarf species of gentian was in full bloom, and covering the ground as thickly as daisies do in a pasture field in England. At Pasta he came to a district which has a mild temperature, being surrounded by forest-covered mountains, where a species of *cinchona* is cultivated, chiefly for export to the United States. Pasta is also a market for vegetable dyes, which are brought there by the Indians. There was much cinchona bark stored up at this place, and also in sheds in the forest; but, as its yield of quinine was small, it did not sell readily. The tree producing this orange or yellow-colored bark, with a coarse and fibrous fracture, is described by Mr. Cross as the *cinchona lancifolia* of Karstén, with large, lanceolate, coriaceous leaves and bark, covered with silvery epidermis. This traveler, after passing through a series of adventures of no ordinary kind, arrived at the city of Popayan, which lies between two volcanoes, at nearly six thousand feet above the level of the sea. Mr. Cross next reached Sylvia, the headquarters of those who buy the bark of Pitayo, Hambola, Tortory and Punace. Passing on to Pitayo some choice plants were discovered, and here seed was collected from trees about fifteen feet high. Mr. Cross describes the soil as varying in color from light brown to nearly black, and in depth from three inches to three feet. In all situations the vigor of the cinchona plant appeared the same; but it was restricted to the dry slopes, or was never found on wet ground. After drying the capsules, he occupied himself in taking the temperature of the region, and he found, at the lowest limit of the cinchona, it rose during the hottest days to 59° or 60°, but at night fell to 46° or 48°, and at certain periods below the freezing point. At the upper limit the temperature ranged during the day from 40° to 48°, and at night fell to 35° or 36°. Hence, it would appear that in dry situations it favors the plant to have an occasional fall in the temperature of three or four degrees below the freezing point, and a daily range of from 8° to 12°. The general vegetation of the region consisted of pipers, solanums, smilax, etc. The winds, which in summer are often violent, do not

appear to affect the cinchona, but the forests are very rarely enveloped in mist. It appears to be a delusion, therefore, on the part of some persons who assert that torrents of rain and mist are necessary for its growth.

Mr. Cross states that he has been in localities in the Andes which had altitudes similar to that of the cold cinchona region, where only a species of *solanum* would grow, and which looked as if on the point of extinction, from the abundance of mosses which twined round the smallest shoots to the points. No cinchona could live in such a climate, a certain amount of dry weather being necessary for ripening the capsules.

As far as we can judge from these explorations of Humboldt, Bonpland and Cross, the United States is unsuited to the cultivation of the South America cinchona, no portion of its extensive domain presenting the necessary combinations of great elevation, moisture and comparatively warm climate. It would be well worth the attention of the General Government to send an expedition for the purpose of exploration and the transportation of the seeds and plants of the species best adapted to the southern portion of the United States. The mountainous regions of some of the Southern States might afford favorable fields for experiments. We would, however, look for the best results in Central America and Mexico. It is well known that many plants possess great powers of adaptation to the changes of climate and soil, and it is possible that certain species of the cinchona might be successfully cultivated and multiplied within the limits of the United States. The inestimable value of these plants to the human race justifies a lavish expenditure for their preservation and propagation in various countries.

HOSPITAL REPORTS—DEATH FROM PULMONARY EMBOLISM.

Reported by THOMAS FOX, M. D., Assistant Physician at Quarantine Hospital,
St. Louis.

Edw. McCarty, aged twenty-eight years, transferred from City Hospital, and suffering from acute hepatitis, was suddenly seized with severe pain in the left mammary region, accompanied by urgent dyspnœa. Respiration 60, pulse 130 per minute. The symptoms failing to yield to the treatment usual for such acute attacks, and, from its suddenness and severe dyspnœa, I deemed the cause to be embolia in some of the larger branches of the pulmonary artery, cutting off the circulation and æration of the blood from a large portion of the lung tissue, and producing death by apnœa. Post mortem examination proved this to be the immediate cause of death, though other existing lesions were sufficient to cause this more slowly than in this case (four hours). The liver was found much enlarged, of a mottled, brownish color, and breaking down under slight pressure. An abscess, containing about half a pint of greenish colored pus, was found in the posterior superior portion of the lesser lobe, where some of the larger branches of the hepatic vein empty into the ascending cava. A small opening was found from the abscess through the wall of the vein, with a clot in the vessel; this clot slightly protruding into the mouth of an anastomosing branch of the same vessel. The thorax contained a large quantity of clear fluid. Large portions of the lungs presented a black and congested appearance, others were of a pinkish hue. The lighter colored portions I supposed to be the district of lung tissue supplied by the occluded branches of the pulmonary artery, the blood remaining in them being exposed to æration, and not undergoing admixture with the portion of blood that had become highly poisonous by passing through the successive rounds of the circulation, and the provisions for æration constantly diminishing. Further, the branches of the pulmonary artery, so far as they could be traced, were filled with a black, coagula nearly up to the lighter colored portion, while the blood contained in its branches beyond was more of a normal hue. The right and left auricles

and right ventricle were distended with black blood, the left ventricle was empty, the aorta was filled with a black coagula as high as the arch. I present this as an interesting case of death by apnoea, caused by metastasis of thrombus from the hepatic vein, producing embolism in the pulmonary artery, and that the thrombus was caused by the extravasation of pus from the hepatic abscess through the wall of the vessel. Another fact of interest which I gathered from the patient is, that some months previous to his attack of hepatitis he suffered from chronic dysentery, which lends much to the fact of the hepatic abscess being a sequela of dysentery, and that the chain of causes which led to death were dependent upon this as a primary cause.

REMARKABLE RECOVERY FROM SEVERE INJURY OF THE HEAD.

The following account, from the *Boston Traveler*, will be read with interest, and we republish it that the case may be put on record for future reference:

At the meeting of the Massachusetts Medical Society, on Wednesday, Dr. John M. Harlow, physician and surgeon, of Woburn, but formerly of Cavendish, Vt., read a paper containing the history of a most interesting case of injury to the head, and presented to the meeting the veritable skull which sustained the injury.

This case occurred some twenty years ago in Cavendish, Vt. On the 13th of September, 1848, Phineas P. Gage, foreman of a gang of men engaged in blasting a deep cut in the continuation of the Rutland and Burlington road, had a tamping iron blown through his brains, and recovered within sixty days, living twelve years after.

Gage was a perfectly healthy, strong and active young man, twenty-five years of age, of nervous temperament, 5½ feet in height, average weight 150 pounds, possessing an iron will as well as an iron frame, muscular system remarkably well developed, having had scarcely a day's illness from childhood up.

As described in the paper read, it appears that a drill hole had been charged with powder, and he was tamping it in. The iron struck fire from the rock, the charge exploded, and the iron was driven up into his cheek and out of the top of his head, high in the air, and was afterwards found several rods distant, smeared with blood and brains.

The tamping iron was $3\frac{1}{2}$ feet in length, $1\frac{1}{2}$ inches thick, and pointed at one end, the taper being seven inches long, and the diameter of the point a quarter of an inch. It weighed thirteen pounds. The point was upward, and the iron smooth.

The missile entered, by its pointed end, the left side of the face, immediately anterior to the angle of the lower jaw, and passing obliquely upward and slightly backwards, emerged out of the top of the head in the medium line, at the back part of the frontal bone, near the coronal suture. It entered the cheek outside the teeth, and under the cheek bone, went inside an inch behind the eye, and out of the top of the head in the centre, two inches back of the line where the forehead and hair meet.

The patient was thrown on his back, and gave a few convulsive motions of the extremities, but spoke in a few minutes. He was taken three-quarters of a mile in a sitting position in a cart, got out of the cart himself with the aid of his men, and an hour afterwards, with the assistance of Dr. Harlow holding his arm, walked up a flight of stairs to his room. He was conscious, but exhausted from loss of blood, which found its way from the mouth into the stomach, and was ejected as often as every fifteen or twenty minutes by vomiting. His bed and person were soon a gore of blood.

One piece of skull had been broken out in fragments, another piece was raised and thrown back, like a door, the scalp serving as a hinge, and on the opposite side of the wound there was another fracture and an elevation. The globe of the left eye was partially protruded from its orbit, the left side of the face was more prominent than the right. The opening in the skull was two inches wide by three and a half long, and the brain was hanging in shreds on the hair. The pulsation of the brain could

be distinctly seen, and the doctor passed his finger in its whole length without the patient saying he felt pain.

On the third day there was inflammation and some delirium; and during several weeks there was occasional delirium. For two weeks of the time the patient lay in a stupid condition, and his death was expected. On the 25th of November he went in a close carriage thirty miles to his home in Lebanon. In fifty-nine days the patient was abroad.

The subsequent history of the case is interesting. Gage came back to Cavendish in April in fair health and strength, having his tamping iron with him, and he carried it with him till the day of his death, twelve years after. The effect of the injury appears to have been the destruction of the equilibrium between his intellectual faculties and the animal propensities. He was now capricious, fitful, irreverent, impatient of restraint, vacillating, a youth in intellectual capacity and manifestations, a man in physical system and passions. His physical recovery was complete, but those who once knew him as a shrewd, smart, energetic, persistent business man, recognized the change in his mental character. The balance of his mind was gone. He used to give his nephews and his nieces wonderful accounts of his hairbreadth escapes, without foundation in fact, and conceived a great fondness for pets.

He went to various places, being engaged here and there; was a year and a half in charge of horses at a livery stable; was exhibited at Barnum's Museum in New York; and in August, 1852, four years after his injury, left New England and went to Valparaiso with a man who was going to establish a line of coaches. Here he lived eight years, occasionally driving a six horse coach, and enduring many hardships. In 1859 his health began to fail; in 1860 he had a long illness, the nature of which can not now be ascertained.

He left Chili, and Dr. Harlow lost all trace of him for some years, but finally found out that the mother and sister were in San Francisco, wrote to them, and ascertained that Gage had got there in 1860; worked with a farmer at Santa Clara, and in February, 1861, was taken with epileptic fits; afterward he

worked in several places; and finally, in May, 1861, had a succession of fits, which lasted a couple of days, and carried him off. There was no autopsy made. Dr. Harlow made overtures for the possession of his skull, on account of its scientific interest, and the world at large is under obligation to the relatives who were willing to surrender it for the uses of medical science. It appears that the man could see out of his left eye, though the lid was not fully subject to the will, and that he was troubled with uneasiness in the head.

Dr. Harlow, in summing up his valuable but interesting paper, presented these views: 1. The recovery is attributed solely to the *vis vistæ*, *vis conservatrix*, or, if some like it, *vis medicatrix naturæ*. [In plain words, he had a good constitution.] 2. This case has been cited as one of recovery; physically the recovery was nearly or quite completed for the four years immediately succeeding the injury, but ultimately the patient succumbed to progressive disease of the brain. Mentally the recovery was only partial; there was no dementia; intellectual operations were perfect in kind, but not in degree or quantity. 3. Though the case may seem improbable, yet the subject was the man for the case, as his will, physique and capacity for endurance could scarcely be equaled; the missile was smooth and pointed, dilating and wedging off rather than lacerating the tissues; the bolt did but little injury till it entered the base of the brain, and that opening served as a drain for the blood and matter and other substances that might have caused death by compression; the part of the brain traversed was the strongest for the purpose.

Dr. Harlow had with him, and exhibited, the skull and the iron.

The piece of skull, which was thrown backward like a door, and was afterwards replaced, had grown to the opposite edge by a new formation of bone plainly marked; the holes were large and well defined, and the whole appearance of the skull proved the truth of the account, which has also been verified by letters from some of the first men in Cavendish, Vt. It appears that early in the history of the case a number of fragments of

bone came down into the mouth through the openings in the inside, and were voided.

Dr. H. J. Bigelow stated his connection with the facts mentioned above, and said he had seen Gage twenty years ago, and was then satisfied of the reality of this wonderful case. He also called the attention of the meeting to a similar accident, by which a tube of iron, five-eighths of an inch in diameter and five feet long, passed through a miner's head while blasting coal in Ohio, and which was pulled out by a fellow miner. The injured man was introduced to the audience, and Dr. Jewett, the attendant physician, recounted the case in detail. The young man's mind has not yet been fully restored.

THE ACTIVITY OF THE SKIN IN THE ABSORPTION OF MEDICINE.

By DR. J. ROUSSIN.

While it is abundantly proved that many articles of the *materia medica*, united with fatty matters, applied to the skin, with a proper amount of friction, are absorbed, experiments with similar articles in a state of solution give different results. According to Laurés, and others, a man may sit for hours in a bath containing 200 or 300 grammes of iodide of potassium without the urine showing the slightest traces of iodine; in the same way one may remain in a bath containing from 20 to 60 grammes of corrosive sublimate without the slightest salivation being produced, while it would be occasioned by much smaller quantities rubbed into the skin. Finally, Magendie left a rather concentrated solution of strychnine in contact with the skin without causing the slightest spasm.

The experiments of Dr. Roussin confirm what was previously known on the subject. He remained from an hour to an hour and a half in a bath containing from 450 to 500 grammes of iodide of potassium; in no instance, when the body was dried, or the solution of the iodide washed off on coming out of the bath, could the slightest trace of iodine be discovered within

twenty-four hours in the urine or the saliva. On the other hand, when, on leaving the bath, the solution adhering to the body was permitted to evaporate spontaneously, iodine showed itself soon after in the urine. In one of his experiments the author wet his arms with the solution of the iodide, and then permitted the solution to evaporate spontaneously; four hours afterward iodine was found in both the urine and saliva. The experiments show that the skin being unbroken, iodide of potassium is absorbed only when it is left in substance in contact with the skin. This becomes still more evident from the following experiments. The author sprinkled the anterior part of his body from the neck to the abdomen with finely powdered iodide of potassium, rubbing it into the skin. The urine for the next twenty-four hours gave abundant evidence of iodine. The same evidence was given when the experimenter wore a shirt which, with the exception of the bosom, had been wet with a solution of iodide of potassium (10 per cent. in strength), and then dried.

Many other substances behave in a manner similar to iodide of potassium, and in this way we can understand the numerous symptoms of poisoning which have been observed, when, through the medium of the clothes, or in some similar manner, poisons come in immediate contact with the skin.

The cause of this passive relation of the skin to medicinal substances dissolved in water with which it comes in contact, arises from the fact that it is not possible for the water to enter the pores of the skin, on account of the fatty character of its surface. On the contrary, water is repelled rather than attracted, just as it is by capillary tubes with fatty walls.

Dr. R. shows that the skin is not in reality wet by watery solutions brought in contact with it; that is to say, the water does not extend in a continuous layer over it, but being repelled by the greasy surface, forms drops upon it. Even soaping of the skin, the spreading out, the adhesion, of the drops which fall upon it, is only apparent; the solution again gathers into drops as soon as the layer of soap, which permitted its adhesion to the skin, is removed. The same thing is observed when the

skin is treated with ether. So soon as this is evaporated, the original relations between the skin and watery solutions placed upon it are renewed, because a constant secretion of fat takes place from it. On the other hand, when a piece of skin, taken from the cadaver, is soaped, after the removal of the layer of soap, water wets it, spreading itself out, without being gathered into drops.

The absorption of fatty matters by the skin finds its natural explanation in the laws of capillarity: they can, rubbed into the skin, pass easily through the capillary vessels, and with them the substances with which they are incorporated, provided only they are minutely enough divided.

In like manner we can explain the absorption of solid matters when placed upon the skin in a pulverulent form, and here become mixed with its fatty secretion.

On the contrary, glycerine, which behaves toward the skin in a manner similar to water, is not to be used as a vehicle for substances which we desire to introduce into the economy through that organ.—*Rec. des Mem. de Med. etc. Milit.*

IMMATURE OBSERVATIONS.

By GEORGE B. WILSON, M. D., Port Huron, Michigan.

There is incalculable injury done the profession every little while whenever a new remedy is introduced, by a host of superficial observers and ready writers, who rush into print through the medical journals to give their evidence in favor of the efficacy of the new medicine in every conceivable form of disease or injury. In many cases—nay, I might say in a majority—the writers have only tried the remedy once or twice, and then, instead of waiting to see if the cure be permanent or not, they publish a report of it, perhaps the same day; very often, at all events, while the patient is yet in the convalescent state and before recovery is complete. The report of cases in such a manner, or even very soon after what is regarded as complete recovery, is highly reprehensible. These persons seem fearful

that some one else may have had a similar case and will publish it before they do. But it is with regard to new remedies, or the trial of old remedies in some new way, that the greatest nuisance arises. It will be recollected how, on the introduction of glycerine into general use a few years ago, the journals were crammed to overflowing with accounts of its wonderful effects and the variety of its applications. From every part of the country, and in every medical journal, and in every number of every journal for about a year, there came accounts of the uses made of glycerine, and of its efficacy in diseases when applied externally or exhibited internally. It is no exaggeration to say that it was recommended in every disease ever heard of as prevailing in this country. As an external application in skin diseases of every kind there came reports of its trial with successful results. Its soothing and anodyne properties as an eye-wash devoid of all irritation were duly vouched for; and its efficacy, in short, in every disease, not excepting consumption, in which some one found it an excellent substitute for cod liver oil. Any one giving credence to one half of what was written about it could come to no other conclusion than that nearly or quite one-half of the *materia medica* could now be dispensed with and glycerine substituted. Amid all this flood of positive evidence not one word of negative found its way, nor even to this day, though hundreds must have seen the fallacy of most of the statements, has there been anything of the negative kind published. Now, where such a course is pursued about a remedy, and every new remedy goes through the same round that glycerine has, how is one to know from journals or books what the remedy is good for at all? To say that a remedy is equally good for everything, is to say that it is really good for nothing. Most of these letters and notices concerning its varied powers were written after only one successful case. At the present time, and then also, a chapter of negative evidence on the effects of glycerine and kindred articles was much more needed than that of a positive kind. To such an extent has this mistake been carried, that the same is true of almost every article of the *materia medica*. The most valuable paper that

could be published on any one of them would be an enumeration of what it would *not* do.

The very valuable medicine perchloride of iron had to run the gauntlet like glycerine, and came near being swamped with the flood of evidence in its favor. Both of these articles now require a long chapter of negative evidence to restore them to their proper place and estimation. But in fact every article of the *materia medica* needs the same. As an instance of the confusion to which so much positive evidence leads, I give my own experience: A few years ago I was appointed by our State Society chairman of a committee to report on *the action of quinine*. I set about my task by attempting to collect and classify what had been written on the subject, but I soon found that impossible. I became satisfied that I could produce good authority (members of the profession in good standing) proving it to possess almost every power attributed to each of the common classes of medicine, and also proving it to be a specific in every disease of the nosology, and in every stage of each disease. There was little or no conflicting evidence to be found—all the evidence was of the positive kind. There were one or two writers who ventured a negative as to its exhibition in large doses in the second stage of typhoid and continued fevers, but their opinions met with much opposition from other observers. Hence quinine had all powers and virtues, and cured all diseases, and was admissible and desirable in every stage and every condition of every disease. This was the inevitable conclusion derived from consulting the written authorities—text books, monographs and medical periodicals. What was I to do under such circumstances? To give the amount of our knowledge on the action and virtues of quinine as derived from positive evidence would require a volume. Acknowledging my inability therefore to do justice to the subject, I began to write down what I thought quinine would *not* do. The chapter of positive evidence was full; it would do everything. The chapter of negative evidence was a blank, so I commenced the filling of it. I could get no assistance in that work; I had merely to write from

my own experience and observation. But my observations were so limited that I did not deem them worthy of presentation.

Let any one take any other valuable remedy and see if he does not meet with the same difficulty that I did with quinine. We really know less of the therapeutic powers of our valuable medicines now than we did ten years ago—and why? Because what we knew then, and what we have learned since, is so overrun with unreliable statements that we find it impossible to separate the true from the false. About two years ago a physician reported in a journal that he found lupulin to be a specific for *delirium tremens*. He gave it in large doses, having in one instance given as high as six pounds! The enormous dose caused some parties to make inquiry for further information, which came in the next issue of the journal, to the effect, that not the lupulin itself, but a tincture made with six ounces of lupulin, and six pints of brandy had been given!

I also saw it stated in one or two journals that gonorrhœa could be cured effectually in forty-eight hours by extract of conium, administered in twelve grain doses every two hours. Notwithstanding the enormous doses, the editors never expressed suspicion or gave a hint of caution. And to this day I have not seen a contradiction or explanation of the statement.

Again, wonderful cures of every disease were effected all over the country by tincture of cannabis Indica during the first few months after its introduction. Where are they now? Those who reported most of them could not tell the effects of the medicine from the workings of nature, and so became discoverers, and must needs astonish the world forthwith by publishing their discoveries.

I could publish a long list of negative evidence with regard to cannabis Indica, but it is unnecessary now as the article seems to be sinking into obscurity. Of perchloride of iron, too, a long list of negative evidence is wanted. The article is a valuable one, and ought to be disencumbered from the trash that correspondents have heaped upon it.—*Boston Medical and Surgical Journal*.

EXTREME POWER OF LABOR.

The higher limit of the power exerted in natural parturition has been variously estimated. There is an easy and obvious method of arriving at it. Cases are frequently occurring in which labor is artificially terminated by forceps, in circumstances which leave no doubt that, under delay, they would have come with difficulty to a spontaneous conclusion. The power exerted by the forceps in such cases can be measured. Such measurements are not to be at once taken as the power of labor necessary to finish such cases; but when all the various sources of error are considered and included, they are of much value. The chief of such sources of error are the neglect of the assistance that may be afforded to the operator by the natural expulsive efforts, and the including of such forces, exerted by the forceps, as may be unnecessary for carrying on the process; for example, prematurely applied force, or force applied so as to advance the birth too hastily, or force lost by being used in a wrong direction. For the making of observations of this kind by the forceps, special instruments have been invented by Kristeller, Joulin and others.

But forceps-cases do not afford the only evidence available as to the higher limit. Experiments can be made on the dead subject which can be very well relied upon, as reproducing correctly the difficulty encountered in the living, and the power required to overcome it. Such experiments have been made by Joulin, and, when suitably arranged, give us the power exerted in cases which the most powerful parturient efforts might bring to a spontaneous termination; and, it may be added, would involve a mother's life in great risk.

Speaking of these experiments, Joulin makes the following remarks: "Spontaneous delivery has been sometimes observed in circumstances almost identical. It appears to me, therefore, possible to admit that the figure of fifty kilogrammes (about a hundred weight) of force represents very nearly the maximum of the contractile power of the uterus; for it is necessary to take into account the accessory contingent furnished by the ab-

dominal muscles, which, in these instances, was wanting. But, as this force has not a direct action, it is probable that its actual product scarcely rises above a few kilogrammes." On this quotation from Joulin I shall make two remarks—first, that in labor the accessory contingent furnished by the abdominal muscles appears to me to have an action nearly, if not quite, as direct as that of the uterus itself; and second, that I know of no means whatever of estimating its value. In my experiments and descriptions I treat of the powers of labor, that is, of all the powers exerted in combination. Yet there can be no doubt that the paramount power is that produced by uterine contractions.

Having had extensive and varied experience in the use of the forceps in difficult labors, and having also made some rough experiments with the dynamometer, to ascertain the power I have applied with the instrument, I regard M. Joulin's estimate of a hundred weight as the maximum force of the parturient functions as too high. I do not deny that, in very rare cases, such a force may possibly be produced; but I am sure that it is nearer the truth to estimate the maximum expulsive power of labor (including the uterine contractions with the assistant expulsive efforts) as not exceeding eighty pounds.

At present I can divine no method of arriving at an estimate of the expulsive powers of labors generally except the following, and I must guard myself from being supposed to recommend its use, in the meantime, at least. A fine tube, filled with water and of resisting material, may be introduced into the small pool of liquor amnii which remains after the rupture of the membranes, filling up the spaces otherwise vacant on the anterior aspect of the foetus. This tube should be provided with an aperture at its uterine end; it should be curved, so that when introduced it may lie easily in the pelvis, occupying the least possible space, so that no unnecessary resistance be offered to the advance of the foetus; its wall should taper to either side, a cross section of it having a long-pointed fusiform outline, in order that its presence may not produce on either side of it a channel for the running off of the liquor amnii; lastly, its exter-

nal end should be in communication with a column of mercury in a vertical tube, inclosing a column of air under only ordinary barometrical pressure. During the pains the rise of the mercury in the tube may be measured, and calculations from these measurements might be made identical with those already given in the former chapter of this part. By this means, if successfully applied, the force of any labor may be exactly known. And it is scarcely necessary even to suggest how immeasurably valuable to the accoucheur such an estimate would be, substituting, as it would, an experimentally accurate statement of great importance for the vague notions at present relied on, even when the wisest and most experienced practitioner lends his counsel.

There can be no doubt as to the great practical importance of the inquiry entered upon in these chapters. Although it is, as yet, far from completed, there is enough demonstrated to enable Dr. Slop, if he have an opportunity, to cast ridicule on the father of Tristram Shandy, who, founding on the statements of Lithopædus Senonensis, asserts that the force of a woman's efforts is, in strong labor-pains, equal, upon an average, to the weight of four hundred and seventy pounds avoirdupois, acting perpendicularly upon the head of the child!

It would be interesting to know the source, if any, whence the Rev. Lawrence Sterne drew his information as to the power of labor in days when little attention was paid to this subject. But it is more important to look forward and anticipate the advantages which a handy available dynamometer of parturition would afford to the practitioner. They spring up to the thoughtful mind so readily as scarcely to call for statement; when complaints are severe, or cries for relief are urgent, to have a means of judging really what is the power of labor; when a case is protracted, to have a means of estimating the pressure exerted on the child and maternal passages; when, in any case, instrumental interference is under consideration, to have a means of judging if the error is in the force exerted or in the resistance, etc. That some means of thus increasing the beneficent power of the accoucheur will be discovered, I confidently anticipate.—*Researches in Obstetrics by Prof. Duncan, Edinburg.*

A POPULAR FALLACY.—Dr. E. Symes Thompson, in a recent lecture at Gresham College, very truly remarks: "The public demand from the physician a remedy to cure their complaints without any charge or sacrifice on their part. No such remedy exists, or will ever be discovered. Moderation and self-control in diet will alone eradicate the evil. Colchicum, even in the hands of the unskilled, will relieve the immediate attack; but the sufferer will soon find to his cost it is an 'edged tool' not to be played with. Medicine, like food, must be used, not abused; and much judgment is needed rightly to use it. Another common fallacy is to suppose that reading a medical book enables a man to treat disease. It is easier for one ignorant of arithmetic and algebra to work out a mathematical problem, than for a man who knows nothing of physiology and pathology to work out a therapeutical one. People have often treated themselves for gout in the stomach, who were really suffering from pork in the stomach! Medical books have, it may be observed, a wonderful effect in making the reader fancy himself a sufferer from the disease described. The early premonitory symptoms of most diseases are vague and indefinite, needing practical experience and scientific knowledge rightly to understand them."—*Med. Times and Gazette.*

TO DETECT SALICINE IN QUININE.—M. Parrot has indicated a method of detecting the presence of salicine in the sulphate of quinine. In effecting this he takes advantage of the action of chromic acid on salicine. By this process a quantity as small as $\frac{1}{2}$ per cent. is discovered. To make the examination, the quinine salt is introduced with a little water into a flask; 2 c. c. of sulphuric acid, diluted with 4 parts of water, are added, and 4 c. c. of a concentrated solution of bichromate of potash. To the flask is fitted a curved tube which dips into a few grammes of distilled water contained in the little flask serving as receiver. Heat is applied; at the end of three or four minutes hydride of salicyl is produced, which distills. By adding to the water in the flask a few drops of solution of perchloride of iron, a more or less deep violet color is developed.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

ON DISEASES OF THE SKIN; A SYSTEM OF CUTANEOUS MEDICINE. By ERASMUS WILSON, F. R. S. Seventh American from the sixth and revised English edition. With twenty plates and illustrations on wood. Philadelphia: Henry C. Lea. 1868.

This work on the diseases of the skin is sufficiently well known to need much commendation at the hands of the press; having passed through six editions, in this country seven, it gives the author the credit for endeavoring to keep pace with the times, which he most assuredly has done. Mr. Wilson is one of the few who, at the present, merits the title of specialist, for he has pursued the study of cutaneous medicine, of no mean importance, from a different starting point. With him a specialty implies the climax of medical science. In this particular branch a knowledge of general medicine is unquestionably demanded; and thus we have as thorough a work on diseases of the skin as belongs to our language.

There are few physicians who are not acquainted with this work of Wilson. To recommend it is but expressing a unanimous opinion; still we may be permitted to say that the present edition is improved in value and more complete, inasmuch as the syphilitic eruptions, which are more thoroughly treated in later editions, are illustrated by the plates prepared by Mr. Wilson for his work on that subject.

The work may be had of the St. Louis News Company.

SUCCESS OF QUACKERY.—The famous Dr. Radcliff one day was standing at the window of the library in Oxford, in conversation with another physician, a man of modesty and merit, but of small practice. The conversation turned upon the extensive business of an ignorant, vain and empirical physician of the same place, and the physician expressed his surprise how the common sense of mankind could allow themselves to be so gulled. "Pray, sir," says Dr. Radcliff, "how many persons have passed down this street in the last quarter of an hour?" "Not less," replied the other, "than twenty." "How many of those do you suppose," rejoined Radcliff, "are endowed with common sense?" "Perhaps one out of twenty." "Nineteen, then, will of course go to the empiric, and the solitary one be your patient."—*Ex.*

MEDICAL REPORTER.

ST. LOUIS, JULY 1, 1868.

Jefferson Medical College, Philadelphia.—We call attention to the annual announcement of this old and flourishing institution. We see that Professor Dunglison, that veteran and able teacher, has been compelled to retire from the field of active labor, and his chair has been filled by Professor J. A. Meigs, a gentleman of large experience and ample qualifications for the important position.

The Jefferson Medical College had the largest class of graduates last year (159) of any medical institution in the United States. Possessed of abundant opportunities for teaching and clinical instruction, with as able a corps of instructors as any institution in the world, students can not do better than to place themselves under their charge during the next winter course; and from no institution would a diploma reflect more credit.

Comstock's Rational Food for Invalids and Infants.—We take pleasure in recommending the above very valuable preparation. It is composed of malt and wheaten flour, scientifically prepared and ready for use, similar to Professor Liebig's celebrated improved formula. It is a most excellent substitute for breast milk for young children, as well as a good dietetic preparation for invalids and dyspeptics, being readily digested, and affording an agreeable and useful nutriment for weak and feeble persons who, from prostration by disease, are unable to retain more solid food.

Dr. G. H. Lenoir has treated several cases of intermittent fever successfully with the use of liq. ferri persulphatis, when the administration of quinia had failed. He gave the preparation in doses of eight to fifteen drops every four to six hours, usually preceded by a dose of pil. cathart. comp.—*Detroit Review.*

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

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J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

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No. 10.

INDIGENOUS REMEDIES OF THE SOUTHERN STATES WHICH MAY BE EMPLOYED AS SUBSTITUTES FOR SULPHATE OF QUININE IN THE TREATMENT OF MALARIAL FEVER.

By JOSEPH JONES, M. D., Professor of Physiology and Pathology in the Medical
Department of the University of Nashville, Tenn.

NO. 2.—DOGWOOD (*CORNUS FLORIDA*).

Botanical Description—Geographical Distribution—Chemical Composition—Examination of by Dr. Walker, of Virginia, 1803—Dr. Walker's Receipt for making Ink from the Bark—Examination of by Mr. Carpenter, of Philadelphia—Cornine—Observations of Drs. Staples, S. Jackson, James Cockburn, D. C. O'Keeffe—Medical Properties and Uses—Testimony of Dr. Walker, of Virginia, to the Medical Properties of Dogwood, of Dr. Gray, of Bristol, of Dr. Jacob Bigelow, S. G. Morton, K. Coates, D. C. O'Keeffe, and others—Method of Preparing the Extract Dose—Experience of Author with in Southern Army during war, 1861-65, and as a Substitute for Quinine possesses Prophylactic Powers against Malarial fever—Efforts of Surgeon-General Moore and of Medical Purveyors to supply Indigenous Remedies—Testimony of Assistant-Surgeon Warren and of Surgeon F. P. Porcher to the Medicinal Properties of Dogwood.

Botanical Character.—Arborescent; leaves ovate, acuminate; involucre large, obcordate; drupes ovate. A tree fifteen to twenty-five feet high, the trunk eight to ten inches diameter, with expanding branches, the smaller crowded at the extremities of the older. Wood fine grained, hard, durable. Leaves opposite, deciduous, ovate, lanceolate, acuminate, entire, ribbed; the younger ones very pubescent, almost villous on the under surface. Flowers in terminal heads. Involucre four leaved; leaves large, obcordate, nerved, white; the series callous, sessile at the base of each head, and enclosing it before the time of flowering. Calyx one leaved, small, tubular, border four cleft; segments erect, obtuse, shorter than the tube. Petals four, linear, lanceolate, inserted into the summit of the germ, yellowish. Filaments four, as long as the corolla, alternating with the petals. Anthers incumbered, two lobed. Germ inferior, slightly angled. Style shorter than the stamens, surrounded at base by a glandular ring, around which the petals and filaments are inserted. Stigma capitate. Drupe red. Flowers March to April.—ELLIOTT. *Sketch of Botany of South Carolina and Georgia.* Vol. 1, pp. 207-208.

Geographical Distribution.—The *Cornus Florida* is first seen in Massachusetts, between the 42° and 43° of latitude, and extends uninterruptedly throughout the Eastern, Southern and Western States to the banks of the Mississippi. Although abounding especially in the Middle States, it is, nevertheless, one of the most common trees over this vast extent of country. In New Jersey, Pennsylvania, Maryland and Virginia it abounds upon moist, gravelly and uneven soil. In North Carolina, South Carolina, Georgia, Florida and Alabama it is generally found most abundant and most luxuriant on the borders of swamps and low grounds, and scarcely ever in the pine barrens, where the soil is too dry and sandy to sustain any trees but the long leaf Pine (*Pinus Australis*), the Barren Scrub Oak (*Quercus catesbæi*), Upland Willow Oak, (*Quercus cinerea*), Black Jack Oak (*Quercus ferruginea*), and Running Oak (*Quercus pumila*). In the most fertile districts of West Tennessee and Kentucky it is said not to appear in the forests except where the soil is gravelly and of middling quality.

Chemical Composition.—The bark of the root, stem and branches of the *Cornus Florida* is a powerful bitter, possessing a bitter astringent and slightly aromatic taste. The chemical composition of this bark appears to have been first investigated by Dr. Walker, of Virginia, who published his observation in Philadelphia.* He found that water distilled from the bark in powder had a transparent, whitish appearance, with a slight aromatic odor, and no perceptible taste. When the heat was increased, the fluid had a lemon color, with an unpleasant smell and an acerb taste, effects which were probably produced by the volatilization and partial decomposition of portions of the bark in consequence of the continuance of the heat until the moisture was evaporated nearly to dryness. Dr. Walker also endeavored to ascertain the effects of different menstrua upon the extract furnished by evaporating a decoction of the root of *Cornus Florida*. Strong alcohol dissolved from the extract three-fourths of the entire quantity; the part which remained

*Experimental inquiry into the similarity in virtue between the *Cornus Florida* and *Sericea*, and the *Cinchona Officinalis* of Linnæus, &c., &c. By Dr. John M. Walker. Philadelphia. 1803.

undissolved was destitute of taste, and underwent no change of color on adding the test of iron. The alcohol which contained the dissolved portion of the extract possessed an intensely bitter taste, with astringency; presented a clear, red color, and turned to a deep black on the addition of a salt of iron. When the alcohol extract was macerated in repeated portions of sulphuric ether, with a view to ascertain the quantity of resin, the ether acquired a dark color and a bitter taste, and dissolved three-quarters of the extract. When tested with iron it was found that the remaining quarter only was changed to a black color.* Upon the examination Dr. Walker announced that the Dogwood contained gum, resin, tannin and gallic acid. Dr. Walker thus sums up the results of his experiments: "A summary recapitulation of these experiments shows that the *Cornus Florida* and *Sericea* and the Peruvian Bark possess the same ingredients—that is, gum, mucilage and extract, which last contains the tannin and gallic acid, though in different proportions. The Florida possesses most of the gum, mucilage and extract, the *Sericea* next, which appears to be an intermediate between the Florida and Peruvian Bark, while the latter possesses most of the resin "

The virtues appear equally similar in their residue. The extract and resin possess all their active virtues. The extract appears to possess all their tonic power. The resin, when perfectly separated from the extract, appears to be purely stimulant, and probably the tonic power of the extract is increased when combined with a portion of the resin, as in the spirituous tincture.

Mr. G. W. Carpenter, of Philadelphia,† subsequently announced the discovery of a peculiar bitter principle, for which he proposed the name Cornine, and which he asserted to be the active alkaloid principle of the *Cornus Florida*, and to be fully equal, if not superior, to Quinine in its tonic and febrifuge properties. In

*Dr. Walker gives a receipt for making an excellent ink, in which the bark of the *Cornus Florida* is substituted for gall nuts: Put half an ounce of dogwood bark, two scruples of sulphate of iron and two scruples of gum arabic in sixteen ounces of rain water. During the infusion shake it repeatedly.

†Essays on some of the most important articles of the *Materia Medica*, &c. By G. W. Carpenter. Philadelphia. 1834. Page 202.

consequence, however, of yielding this salt in so very minute comparative proportion to what the Quinine is yielded by the Cinchona, it is even more expensive than the latter. It is greatly to be regretted that Mr. Carpenter did not publish the method by which he extracted this alkaloid principle. Some have even gone so far to affirm that he did not discover any alkaloid principle at all, because subsequent investigations have failed to detect Cornine. We conceive this criticism to be entirely too severe, for three reasons :

1. No absolutely accurate and complete examination of the bark of the *Cornus Florida* has been made.

2. As Mr. Carpenter did not state his method of obtaining the active principle, it might be supposed that the reagents used have exerted some influence in the transformation as well as the separation of the alkaloid principle.

3. Mr. Carpenter affirms that he submitted the alkaloid Cornine to the examination of several physicians.

This subject is of so much interest and importance that we quote the entire passage from the work of Mr. Carpenter :

“It gives me much pleasure to announce the discovery which I made of an alkaloid base in the *Cornus Florida*, which I have denominated Cornine, and which, with acids, forms neutral salts, the sulphate of which has proved a highly valuable tonic and febrifuge. This article has been very carefully and accurately described by Dr. Samuel G. Morton, of this city, in the *Philadelphia Journal of the Medical and Physical Sciences*, and from the most respectable sources in the medical profession from various parts of the United States where this article has been sent, the most corroborating evidences have been received of the unequivocal success of the Cornine in the treatment of intermittent and remittent fevers, in the same doses as the Quinine; and the only circumstance which precludes its competition with that substance, is the minute comparative proportion of Cornine yielded by the *Cornus Florida*. If, however, at any time we should fail in our supplies of Cinchona, which is not impossible, or even improbable, we shall then be able to

supply its place by this principle of the *Cornus Florida*."—*Essays on the most important Articles of the Materia Medica.* Page 203.

Dr. S. G. Morton,* of Philadelphia, described Cornine as a grayish-white powder, extremely bitter, and deliquescent when exposed to the air, and affirmed that he had exhibited it in cases of intermittent fever with much success. Dr. Morton considered it to be in no respect inferior to Quinine.

Dr. R. Coates, and several other practitioners, exhibited this salt in the same cases in which Sulphate of Quinine is employed, and with decided success.

Cornia, according to Mr. Carpenter, does not crystallize, but forms, on evaporation, a viscid mass. It is a pale straw color, attracts the moisture of the atmosphere, and dissolves in alcohol and in sulphuric, acetic and muriatic acids, with which it forms crystallizable neutral salts. The sulphate crystallizes in acicular or needle-like crystals, deliquescent, and consequently soluble in water, of a grayish-white color, and its taste is intensely bitter. According to the testimony of Joseph Tongo,† M. D., and E. Durand, of Philadelphia, Dr. Staples obtained it by digesting the bark of the root of the *Cornus Florida* in alcohol of 30° of Faumé's areometer. After several days had elapsed, the latter was filtered and concentrated by distillation in a water bath. On cooling a granular extract was obtained, of a light pink color, of a very bitter and astringent taste; when treated with diluted sulphuric acid, afforded a very small quantity of crystals of Sulphate of Cornia, without having been exhausted of all its bitterness and astringency.

Mr. Ellis states that Dr. S. Jackson, lately of Northumberland, Pennsylvania, informed him that he had subjected the bark to Henry's process for obtaining Quinine from *Cinchona*, and that without carrying the process so far as to obtain a crystalline salt, he used the concentrated alcoholic solution with the

*Philadelphia Journal of the Medical and Physical Sciences. XL.

†A Manual of Materia Medica and Pharmacy, comprising a concise description of the articles used in Medicine. By H. M. Edwards, M. D., and P. Vavascur, M. D. Translated from the French by Joseph Tongo, M. D., &c., and E. Durand, &c. Philadelphia. 1829.

most decisive results, and was satisfied that it contained a principle analogous to quinia.

Mr. James Cockburn examined the *Cornus Florida* in 1835 with the following results :

The decoction, which was of a light red color, and slight mucilaginous appearance, formed a precipitate with a solution of subacetate of lead, which consisted of gum, coloring matter, and other foreign substances. A precipitate was also formed with pure alcohol. Upon the addition of water to the tincture, concentrated by evaporation, it threw down a curdy precipitate, which, upon examination, was found to be resin.

The decoction and tincture redden litmus paper, and cause a yellowish precipitate in a solution of gelatine, and one of a dark olive green in a solution of sulphate of iron. They also afford precipitates with sulphuric and muriatic acids, lime water, alumina, the carbonates of ammonia and potassa, tartrate of antimony and potassa. The color becomes lighter on the addition of nitric acid, milky by the corrosive chloride of mercury, and has its color deepened by ammonia.

A portion of the bark was digested in sulphuric ether for a few days and filtered. The ethereal tincture was of a lemon color, and reddened litmus paper, and on evaporation deposited on the sides of the vessel a fatty matter, insoluble in water, but soluble in alcohol, leaving a greasy stain on paper. Besides this there was a compound of oil and resin combined with coloring matter, and a substance of a light brown color, very bitter taste, friable and very regular appearance, supposed to be a compound of a peculiar bitter principle, mixed with tannin and other matters. This was dissolved in alcohol, and formed a beautiful red colored tincture, which reddened litmus paper. Lime was then added, boiled, filtered and evaporated. A substance resembling the ethereal residue remained, interspersed with small, shining acicular crystals, of a bitter taste, which property I am disposed to believe they owed to the bitter extract with which they were associated. The bark used in the last experiment was submitted to the action of boiling ether,

which, on cooling, deposited a substance of the consistence of wax, which it resembled in all its properties.

Two ounces of the bark, coarsely powdered, were then introduced into ℥viii of alcohol, and exposed to a temperature of from 105° to 120° F. The alcohol was then decanted, and a fresh portion added and treated as before. The liquors were then united, and a solution of sub-acetate of lead added to separate the coloring matter. After the insoluble portion subsided the clear liquor was separated, a little sulphuric acid was then added to the solution to separate any excess of sub-acetate of lead. This was filtered, and the alcohol distilled off. There remained in the retort an oily like substance, together with a principle of a dirty white color, curdled appearance, resembling the residue of the ethereal tincture. Ammonia was then added to the liquor to precipitate any principle remaining in solution. The residue was then treated with a little sulphuric acid, water and animal charcoal (previously treated with muriatic acid), which, upon evaporation, deposited an abundant crystalline mass, of a flaky appearance, resembling at first sulphate of quinine, but on cooling assumed a feathery appearance, with a sharp, saline taste, soluble in hot and cold water, insoluble in alcohol and ether, soluble in nitric acid, and resembled sulphate of ammonia in all its properties.

One pound of coarsely powdered bark was boiled for half an hour in one gallon of water, acidulated with ℥iiss. sulphuric acid. The tincture was poured off and treated with animal charcoal, and when evaporated left a brown extract of a resinous, waxy appearance, and very bitter taste, which appeared to have very much the flavor of Peruvian Bark. This was again treated with animal charcoal, and left, on evaporation, a crystalline mass in an impure form, which was slightly soluble in alcohol, almost insoluble in ether, but very soluble in nitric acid. The alcoholic solution was evaporated, and left crystals of a very fine, long, flexible and silky appearance, which crystals decomposed when thrown upon red coals, and did not form a precipitate with oxalate of ammonia, but were without taste. The bitterness was entirely owing to the bitter extract, which

was slightly soluble in water, soluble in alcohol, but nearly insoluble in ether. This I propose to call bitter extractive; and in this, I am inclined to believe, the active principle resides.

A concentrated tincture yielded by evaporation a dark brown extract, slightly soluble in water, soluble in alcohol and ether, bitter aromatic taste, possessing the properties of resin. Both this and the watery extract possess the sensible properties of the bark in a concentrated form.

There is a red coloring principle in this bark, taken up very feebly by alcohol and ether, but less so by water, and has its color rendered deeper by an alkali.

One thousand grains of the bark yielded, by incineration, a product weighing sixty-five grains. This residue was submitted to the action of boiling water, and concentrated by evaporation; it then had an alkaline taste, effervescent strongly with acids, and restored the blue color to litmus, previously reddened by an acid. It was then neutralized with nitric acid, and upon evaporation yielded crystals of nitrate of potassa.

The insoluble residue of the preceding experiment was dissolved by nitric acid (with the exception of a minute portion of carbonaceous matter), with violet effervescence. The colorless solution thus obtained threw down a white precipitate, on the addition of oxalate of ammonia, and a deep blue one with ferrocyanate of potassa. It produced also a dark green or black with tincture of galls. Carbonate of soda, when added to the solution, caused a white flocculent precipitate. On adding a solution of phosphate of soda no change was immediately produced, which led to the belief that a salt of magnesia was present.

From the result of these few and imperfect experiments we may venture to enumerate the following as among the principal constituents of the *Cornus Florida*: 1. Gum; 2. Resin; 3. Tannin; 4. Gallic Acid; 5. Oil; 6. Fatty Matter; 7. a Crystalline Substance; 8. Bitter Extractive; 9. Wax; 10. Red Coloring Matter; 11. Lignin; 12. Potassa; 13. Iron. To which may be added Salts of Lime and Magnesia.—*Cornus Florida*, by James

Cockburn, jr. *Extract from Thesis. Phil. Col. of Phar. American Journal of Pharmacy. July, 1835. New Series. Vol. 1. Pages 111-114.*

Dr. D. C. O'Keeffe, whilst a student of medicine in the Medical College of Georgia, published a valuable article on the chemical constitution and febrifuge properties of Dogwood Bark, in which he states that, with the assistance of Dr. Robert Campbell, he had determined upon and conducted the following process for obtaining Cornine:

Pulverize two pounds of the well dried bark of the root; separate its tannin with sulphuric ether, and filter. Macerate the separated bark in alcohol for two days to extract its resin and cornine. Pour off the alcohol, and precipitate the resin with water. Filter off the resin, and precipitate the cornine from the liquor with a solution of sub-acetate of lead. Separate the sub-acetate of lead from the solution by passing a current of sulphuretted-hydrogen gas through it. Filter and evaporate the fluid down to the cornine.

This substance is possessed of decided acid properties, having a well marked acid reaction. It is of a dark straw color, very bitter and astringent.—*Southern Medical and Surgical Journal. January, 1849. Pages 6-7.*

Dr. O'Keeffe cites the testimony of Professor Geiger, of Heidelberg, as confirmatory of the results of his examination of the acid properties of Cornine.

It is evident, from the discrepancies in the statements and views of these various observers, that the analyses of Dogwood, thus far published, are not sufficiently thorough and accurate, and that the profession needs more extended and definite information with reference to the chemical and physical properties of this valuable indigenous plant.

Medical Properties and Uses.—The bark of the Dogwood has been known and successfully used in the treatment of intermittent fevers for more than one hundred years.

Upon the human body the bark of the *Cornus Florida* acts as a tonic, astringent and antiperiodic, and resembles in its general effects Peruvian Bark.

Dr. Benjamin Smith Barton, in the *Philadelphia Medical and Physical Journal*, of 1805, says: "The bark of the *Cornus Florida*, or common Dogwood, does more than support its former reputation. It was used with much success in the generally prevailing intermittents of Maryland and Virginia in 1804. By some respectable practitioners it was deemed but little inferior to good Peruvian Bark." Page 181.

Dr. Walker, by numerous experiments with it upon the healthy system, determined that it uniformly increased the force and frequency of the pulse, and augmented the heat of the body. He instituted collateral experiments with the Peruvian Bark, and found that both its internal and external effects agreed with those of the *Cornus*.

Dr. Gregg, of Bristol, Pennsylvania, states that after employing the *Cornus Florida* for nearly twenty-three years in the treatment of intermittents, he was satisfied that it was not inferior to Peruvian Bark, and that he had found it uniformly beneficial as a tonic in cases of debility. Among the number of cures by this medicine was that of his own case. Dr. Gregg estimated thirty-five grains of it equal to thirty grains of Peruvian Bark, and observed that the only inconvenience accompanying its use was, that if taken within a year after being stripped from the tree it sometimes occasioned acute pains in the bowels; but this evil was remedied by adding to it five grains of Virginia Snake Root (*Aristolochia serpentaria*). He recommends the bark as being in the best state after it has been dried a year.

In an intermittent fever, which prevailed many years ago in West Jersey, it is said to have proved, generally speaking, more beneficial than Peruvian Bark.

Drs. Jacob Bigelow, S. G. Morton, R. Coates, and many other medical men have employed this bark with advantage in intermittents and in debilitated states of the system, accompanied with loss of appetite and indigestion. I have myself used it with good success in the treatment of our climate fevers.

In the Southern part of Georgia I have known the planters to employ it extensively amongst their people, in combination with

the Wild Cherry Bark and Wild Horehound (*Eupatorium pilosum*), not only in the treatment of intermittent fever, but also in colds and dropsies, and in all cases of debility accompanied with loss of appetite and indigestion.

Dr. B. S. Barton states that a decoction of the Dogwood Bark was found very useful in a malignant disorder of horses, called "yellow water."

Dr. D. C. O'Keeffe, in the article previously referred to, gives an interesting account of the physiological as well as the therapeutic action of the extract of Dogwood, and supports his views by fifteen accurately detailed cases of intermittent fever.

In order to ascertain with precision the effects of large doses of the extract on the system in a physiological state, Dr. O'Keeffe instituted the following experiment upon himself:

10 A. M., first dose, 30 grs. extract; pulse previous to taking it 72.

11 A. M., second dose, 30 grs.; pulse intermittent, 72-76; temperature of surface somewhat augmented; general perspiration; a sense of fullness and slight, dull pain over the frontal eminences, much increased on flexing the head forward and downward; uneasy feelings in the stomach and bowels.

12 M., third dose, 30 grs.; pulse 76, not intermittent, but somewhat depressed; sensation in the head uniform. On taking this dose a sense of warmth was felt in the stomach, and radiated over the surface of the trunk.

1 P. M., fourth dose, 30 grs.; pulse 76, and regular; pain in the head augmented, and extended down the forehead to the eyelids, with a disposition to sleep; slight oppression in the precordia.

Eating dinner neither mitigated nor heightened the dull headache, which continued the same throughout the day. At night tendency to sleep much more urgent. Retired early; slept well during the night, and arose in the morning free from any uneasy sensations whatever.—*Southern Medical and Surgical Journal*. January, 1849. Pages 10-11.

The discrepancies between the effects observed by Dr. O'Keeffe and Dr. Walker may have been due to the fact that

the former used the extract and the latter the bark. Be this as it may, it is nevertheless true that the profession needs an extended series of experiments upon the action of the various preparations and constituents of the *Cornus Florida*. Until these data are supplied it would be worse than useless to attempt any critical analysis and description of its physiological effects.

Dr. O'Keeffe not only substantiates the testimony of various physicians to the great value of Dogwood in the treatment of malarial fever, but he also establishes the fact that the extract has no tendency whatever to disturb the stomach and bowels. This is important, for the alleged tendency of the *Cornus* to disturb the stomach and bowels mentioned by so many writers has exerted no little influence in causing this valuable remedy to remain neglected.

According to Mr. Carpenter the *Cornus Florida* yields a beautiful extract, resembling very closely that of *Cinchona*; differing, however, in its sensible characters from the extract of the superior species of Peruvian Bark, by being less bitter and more astringent. The following is the most eligible mode for preparing this extract:

Evaporate in a sand or water bath a tincture of the bark, made by digesting it in proof spirits in the proportion of two ounces of the former to a pint of the latter, suffering it to stand for at least a week before straining; occasionally during this time submitting it for a few hours to a moderate heat, and thereby facilitating the solution. This extract, from its most prominent and sensible characters, is unquestionably much more active than the common extract of *Carthagena Bark*, and is a preparation admirably adapted in all cases where the *Cornus* may be employed with advantage; and in consequence of being a concentrated preparation, separated from the ligneous and insoluble portions, and containing less gum and mucous matter (which constitutes so large a portion), is certainly much preferable to the crude substance, and, no doubt, will be resorted to by many country practitioners as a useful expedient, particularly in those places where this article is in profusion, and

where bark of a good quality is frequently very scarce, and sometimes even unknown.—*Essays on Materia Medica, &c.*, by G. W. Carpenter. Pages 203–204.

The extract thus prepared has been exhibited with success by several practitioners, in the same doses as the alcoholic extract of Cinchona.

Dose of extract of *Cornus Florida*, from gr. X to ʒii, repeated as often as the case demands. Dose in powder from twenty to thirty grains, to be repeated according to circumstances. It may also be given in decoction, made with an ounce of the bark to the pint of water, of which the dose is from an ounce to two ounces. In some parts of the country the ripe berries infused in brandy have been used as bitters, and the infusion of the flowers is said to form a good substitute for chamomile tea. A decoction of the buds and twigs has been thought to agree better with weak stomachs than the other preparations.

During the recent war, in both civil and military practice, I have used the decoction and tincture of Dogwood to a considerable extent, and found the remedy of value in the treatment of malarial fever. In the severe cases the paroxysm was arrested with Sulphate of Quinine, and the patients were then put upon the Dogwood, to secure the tonic as well as the antiperiodic properties. I also employed in military practice in the treatment of intermittent fever, with most satisfactory results, a mixture composed of tincture of Dogwood, Nitric Acid and common Salt. The following is the formula most generally employed :

R—Saturate Tincture of Dogwood Bark, f ʒxij; Nitric Acid (concentrated), f ʒi; common Salt (Chloride of Sodium), ʒi. Mix tablespoonful in cup of water every four hours, sucked through a quill.

Under this preparation not only was the recurrence of the chills prevented, but the sallow, jaundiced complexion of the soldiers, who had long been exposed to the action of malaria, assumed the clear hue of health. Both the Nitric Acid and the common Salt in this mixture were also efficient agents in breaking up the paroxysms, and in causing such an increased action

of the liver and kidneys as removed the effete compounds resulting from the prolonged action of the malarial poison.

As far as my personal investigations extend, I was led to the belief that the tincture of Dogwood possesses decided prophylactic powers against malarial fever.

The compound tincture of Dogwood was issued by the Medical Purveyors to the Confederate troops serving in damp, swampy, marshy, malarious regions with good effects in protecting the troops against malaria.

Thus the Eutaw (25th South Carolina) regiment, whilst it was encamped upon James' Island, in a locality notorious for the prevalence of malarial fevers of the severest character during the summer and fall months. This regiment had a mean strength of near eight hundred officers and men. During the summer and autumn of 1862 as large a proportion as one-third of the mean strength were at times upon the sick list with the various forms of malarial fever.

The assistant surgeon of this regiment, J. W. Warren, of South Carolina, communicated to the author, during his inspection of the sick upon James' Island, some interesting facts upon the prophylactic powers of certain indigenous remedies.

A compound tincture, or medicated whisky, prepared by the Medical Purveyor from the Dogwood, Cherry, Poplar and Willow Barks, was administered daily, in the proportion of one-half to one gill to each man during two weeks in the month of September, 1862. Under the use of this tonic mixture the number of new cases of malarial fever diminished one-half, although as the autumnal season advances upon James' Island malarial fevers increase in number and severity. The supply of this medicated whisky being limited, at the end of two weeks it was exhausted, and in the course of eight days the cases of malarial fever had increased from thirty-six to eighty. A fresh supply having been obtained its use was again commenced, and in the course of five days the number of cases of malarial fever fell to the original number.

In the absence of Quinine a strong tincture of these barks was used with good effects in the treatment of malarial fever. I

requested Assistant Surgeon Warren to continue these experiments, with certain variations, designed to determine the active and the inert ingredients in the tincture, and also indicated a plan by which the prophylactic powers of Dogwood might be fairly tested.

Dogwood received the special attention of the Surgeon-General, S. P. Moore, of the Confederate States army, and of the Medical Purveyors, at an early period in the war, as will be seen from the following official papers:

CIRCULAR.

CONFEDERATE STATES OF AMERICA, }
SURGEON-GENERAL'S OFFICE.
Richmond, Va., Dec. 5, 1862. }

—, *Medical Purveyor C. S. A.*:

SIR—Below you will find a formula for a compound tincture of the indigenous barks, to be issued as a tonic and a febrifuge, and substituted, as far as practicable, for Quinine.

Very respectfully, your ob't serv't,

SAMUEL P. MOORE, S. G., C. S. A.

Dried Dogwood Bark 30 parts.

Dried Poplar Bark 30 parts.

Dried Willow Bark 40 parts.

Whisky 45 degrees strength.

Two pounds of the mixed barks to one gallon whisky. Macerate fourteen days and strain.

Dose one fluid ounce (f 3j) three times a day.

CIRCULAR NO. 12.

CONFEDERATE STATES OF AMERICA, }
PURVEYOR'S OFFICE,
Richmond, Va., August 22, 1862. }

—, *Medical Purveyor, C. S. A.*:

SIR—Although no orders have been issued to that effect, some of the Purveyors appear to be under the impression that they should make a mixture of the indigenous barks (Dogwood, &c.) and whisky. The arrangement intended by the Surgeon-General and Commissary-General is, that the Commissary Department shall furnish the whisky to the troops, giving each man one drink a day. The Purveying Department was to furnish the barks to mix with the whisky, to make a species of army bitters, as a preventive against malaria, &c. The arrangement is merely an issue of whisky by the Commissary Department to the troops, and the Purveying Department furnish the bark to mix with it. This office has not as yet been instructed

whether the mixture is to be made at the Purveying depot or at the Commissary depot. Therefore whisky will not be issued in other than the medical preparations that have been, or may be, ordered as regular issues.

Very respectfully, your ob't serv't,

E. W. JONES, Chief Med. Purv. C. S. A.

CIRCULAR NO. 19.

CONFEDERATE STATES OF AMERICA, }
MEDICAL PURVEYOR'S OFFICE, }
Richmond, Va., November 1, 1862. }

—, *Medical Purveyor, C. S. A.:*

SIR—Your attention is called to the following extract from Carpenter's Essay on the *Materia Medica*:

* * * "The *Cornus Florida* yields a beautiful extract, resembling very closely that of *Cinchona*, differing, however, in its sensible character from the extract of the superior species of Peruvian Bark, by being less bitter and more astringent.

"The following is the most elegant mode for preparing this extract: Evaporate in a sand or water bath a tincture of the bark made by digesting it in proof spirits, in the proportion of two ounces of the former to a pint of the latter, suffering it to stand for at least a week before straining, occasionally during the time submitting it for a few hours to a moderate heat, and thereby facilitating the solution.

"This extract, from its most prominent and sensible character, is unquestionably much more active than the common extract of *Carthagena Bark*, and is a preparation admirably adapted in all cases where the *Cornus* may be employed with advantage, and in consequence of being a concentrated preparation, separated from the ligneous and insoluble portion, and containing less gum and mucous matter (which constitute so large a portion), is certainly much preferable to the crude substances, and no doubt will be resorted to by many country practitioners as a useful expedient, particularly in those places where this article is in profusion, and where bark of a good quality is frequently very scarce, and sometimes even unknown.

"The extract thus prepared has been exhibited with success by several practitioners, in the same doses as the alcoholic extract of *Cinchona*.

"Dose of extract of *Cornus Florida* from ten grains to two drachms, repeated as often as the case demands."

This preparation appears to be a desirable one, and you will accordingly include it among those to be prepared for issue.

Very respectfully, your ob't serv't,

E. W. JONES, Chief Med. Purveyor.

OFFICE MEDICAL PURVEYOR, }
 Montgomery, Ala., Feb. 11, 1863. }

—, Medical Purveyor, C. S. A.:

SIR—Yours of the 9th inst. has been received. I can send you thirty-five pounds Spts. Nitre Dulce. I am preparing it, but will be out of Nitric Acid in a day or two. If you can send me some Nitric Acid I can manufacture Spts. Nitre for you. I have a few pounds of Aqua Ammonia to spare, and can make you some if you can procure for me Muriate of Ammonia. I can send you Fluid Extract Sarsaparilla, Tinct. Muriate Iron, Fluid Extract of Blackberry, Tinct. of Dogwood, Poplar and Willow, solid Extract Podophyllum, Syrup of Squills, solid Extract of Dogwood, Syrup of Wild Cherry. All these I am manufacturing in considerable quantity. I am now making Aether Sulph. in order to make Tannin, and Chloride of Lime for making Chloroform, both of which I shall manufacture this month.

The Fluid Extract of Blackberry I can recommend as a capital astringent in dysentery and diarrhœa. The Extract of Podophyllum is a safe and thorough purge. The Extract of Dogwood is a good substitute for Quinine. The Tinct. of Dogwood, Poplar and Willow is used in the Hospitals here in large quantities. All these preparations are made with care.

Your obedient servant,

WM. H. ANDERSON, Med. Purveyor.

The following observations upon the medicinal properties of the *Cornus Florida* (Dogwood) appeared in a valuable work, prepared by Surgeon Francis Peyre Porcher, M. D., of Charleston, South Carolina, and published by order of the Surgeon-General, C. S. A., 1863:

Cornus Florida (Dogwood).—This well known plant possesses tonic and antiperiodic properties very nearly allied to those of Cinchona. In periodic fevers, one of the most valuable of our indigenous plants. Dr. Gregg states that after employing it for twenty-three years in the treatment of intermittent fevers, he was satisfied that it was not inferior to Peruvian Bark. Generally given in conjunction with laudanum. It also possesses antiseptic powers. In the recent state it is less stimulating than the Cinchona Bark, but it affects the bowels more. The dried bark is the preferable form. The fresh bark will sometimes act as a cathartic. It is more stimulating than Thoroughwort (*Eupatorium*), and, therefore, is less applicable during the

hot stages of the fever. * * In our present need of astringent antiperiodics and tonics, the Dogwood Bark powdered will be found the best substitute for the Peruvian. Internally and externally, it can be applied wherever the Cinchona Barks were found serviceable. The Dogwood Bark and Root in decoction, or in form of cold infusion, is believed by many to be the most efficient substitute for Quinine, also in treating malarial fevers. Certainly it might be used in the cases occurring in camp to prevent the waste of Quinine, as it can be easily and abundantly procured.

Dr. Richard Moore, of Sumpter district, informs me that he not only finds it efficient in fevers, but particularly useful, with whisky or alcohol, in low forms of fevers and dysintery occurring near our river swamps.

During convalescence, when an astringent tonic is required, this plant supplies our need. See Eupatorium (Boneset) and Liriodendron. These, with the Blackberry and Chinquapin as astringents, the Gentians and Pipsissiwa as tonics and tonic diuretics, the Sweet Gum, Sassafras and Beni for their mucilaginous and aromatic properties, and the Wild Jalap (*Podophyllum*) as a cathartic, supply the surgeon in camp with easily procurable medicinal plants, which are sufficient for almost every purpose. Nitrate and Bi-carbonate of Potash are most required, and, with Calomel, may be procured from abroad. Our supply of Opium can be easily procured by planting the poppy and incising the capsules. Every planter could raise a full supply of Opium, Mustard and Flaxseed. The wood of the Dogwood, like the Willow, is preferred in making gunpowder. See *Salix*.

A tonic compound, as advised by the herbalists, is made with the bark of the root of the Dogwood, Columbo (*Frasera*), Poplar, each six ounces; bark of Wild Cherry, six ounces; leaves of Thoroughwort, four ounces; Cayenne Pepper, four ounces, sifted and mixed. Dose, a teaspoonful, in warm or cold water, repeated.

It is stated in the *Newbern Progress* that a ripe Dogwood berry taken three times a day, before meals, will cure ague and fever.

My friend, Professor F. A. P., contributes the following to the *Charleston Courier* :

[The Dogwood Bark, powdered may be used in place of the Peruvian mentioned.]

Dutch Remedy for Fever and Ague.—As Quinine is very scarce, it may not be unprofitable, both to our armies and private families, to revive the memory of an ancient remedy, which was in almost universal use before the introduction of the former drug. It was known by the name which heads this article, and has been used from time immemorial among the Huguenot families of the Santee, among whom there is a tradition that it was brought to this country by the ancestor of one of the families, who was a physician. The remedy quoted below is copied from an old receipt book. Though not a professional man, I can speak for its efficacy when it was in vogue :

The Recipe.—Two ounces of Peruvian Bark, two ounces of Cream of Tartar, sixty Cloves.

Manner of Using It.—These ingredients are to be rubbed together in a mortar. The mixture to be divided into twenty-four doses, four of which (mixed in water) are to be given the first day, four on the second, and two on every succeeding day, until the whole shall have been taken. It is probable that the disease will be arrested on the second or third day; but the object in taking the whole prescription is to complete the cure by its tonic property.

The berries of the Dogwood have also been highly recommended; given as a remedy for fever in place of Quinine (1862). One or two given in form of pill.—*Resources of the Southern Fields and Forests, Medical, Economical and Agricultural, &c., by Francis Peyre Porcher, M. D., Surgeon, P. A. C. S. 1863. Pages 59-62.*

NO. 3.—*CORNUS CIRGINATA, wild (BOUND-LEAVED DOGWOOD), AND CORNUS SERICEA, wild (SWAMP DOGWOOD).*

The ten species of *Cornus* indigenous to the United States are all supposed to possess similar medicinal properties. With the exception of the *Cornus Florida*, the two now under consid-

eration have been most carefully investigated. Our knowledge, however, of both their chemical and medicinal properties is not only more imperfect than that of the *Cornus Florida*, but is vague and meagre. Professors Mason and Ives appear to have been the first to introduce the *Cornus Circinata* into medical practice. They recommend it very highly for its astringent and tonic properties, and affirm that they have successfully used it in intermittent fevers and dysentery. Mr. Carpenter announced that the alkaloid principle, Cornine, exists in this species of *Cornus*.

The alcoholic extract appears to be the most eligible mode of using this article. The extract is prepared in the same manner with that of the *Cornus Florida*. It possesses more astringency, and is therefore better adapted to the treatment of dysentery. As this plant appears to be rare in most of the Southern States, it is not likely that it will ever be extensively employed, especially as the *Cornus Florida* is not only more abundant, but also fully as efficient. The bark of the *Cornus Sericea* (Swamp Dogwood) was found by Dr. Walker to be equal to that of the *Cornus Florida*, and but little inferior to the common pale Peruvian Bark in the treatment of intermittents. It forms a beautiful tincture with proof spirits.

As the Swamp Dogwood inhabits the North American continent from Canada to Florida, growing in moist woods, in swamps, and on the border of streams, especially in the mountains, it is well worth the attention of the physicians of the United States.

The dose and modes of preparation and administration are the same with those of the *Cornus Florida*.

BELLADONNA IN OBSTINATE CONSTIPATION.

By THOMAS W. CRELL, M. D., Springfield, Mo.

Whilst doing a country practice several years ago in South-western Virginia, two cases presented themselves to me, which were peculiar in their character, and which were not clearly defined in any medical treatise to which I had access at the

time. They were both boys, from six to ten years of age, and the most prominent symptoms were as follows: Obstinate constipation, with frequently recurring colicky pains, occasionally extending over the whole abdomen, but oftener commencing about the cæcum, and following the course of the large intestines. When most exacerbated, you could readily see and feel the wave-like, peristaltic movement of the entire colon.

The cases progressed for two or three months, and were attended with loss of appetite, emaciation, restlessness, and, finally, death. Purgatives, mineral and vegetable tonics, anodynes, alterative and counter-irritation were resorted to without success. The only benefit resulting from treatment followed the free use of purgatives, and this would last but two or three days. No post-mortem examination was permitted in either case.

In June, 1864, in the same locality, a robust negro man, aged twenty, presented himself to me for treatment with the same symptoms as those that marked the cases of the two boys; with the difference, however, that a few weeks previous he had passed through a rather prolonged attack of typhoid fever. Constipation was obstinate, and the peristaltic movement distinct, and decidedly painful. The most active purgatives had to be used from the commencement, and their frequent repetition was sometimes necessary before any effect could be obtained. His condition would improve decidedly after their successful use, but the acute suffering would speedily return so soon as the bowels became confined.

The case progressed until September, with frequent remissions and exacerbations, when all cathartics to which I could have access failed to have their therapeutical effect. Large enemata thrown up the rectum beyond the sigmoid flexure, by means of large elastic tubes made for the purpose, likewise failed to give relief. Having no success in permanently relieving the patient, *after having fulfilled all the therapeutical indications that presented themselves to me*, it occurred to me that the spasmodic constriction of the colon might be overcome by the relaxing effect of

large doses of Belladonna. Accordingly the solid extract was given in about two grain doses every six hours, until the system was thoroughly under its influence, which took place in about thirty-six hours after this plan of treatment had been commenced. About this time the bowels commenced moving copiously and frequently, and the result was entire relief from pain. But to my regret the old symptoms returned after a few days, and the former purgative treatment was renewed, owing to the infidelity of the consulting physician on the therapeutical effect of the Belladonna. But all purgatives had by this time lost their specific action, and recourse was again had to the solid extract, with like good results as before. We resorted to it four times with like efficacy. It was given for the last time in October, and, according to his nurse's story, he passed about a quart of cherry seeds, which had been swallowed during the previous June. Within a few days after this he died of gangrene of the bowels, induced, I suppose, by the long retention of these foreign substances within the colon. During the entire period of his sickness he was in the habit of taking the most active cathartics, but they most commonly seemed to have no other effect than to fruitlessly increase peristaltic action.

During the past year I prescribed the solid extract of Belladonna to a married lady, who, about two weeks after a tedious labor, began to complain of pain in the right iliac region. The paroxysms came on every other morning, and were ushered in by symptoms not unlike intermittent fever, hence an antiperiodic treatment was adopted, and kept up for several days to its utmost tolerance, but without benefit. Her habit having been costive for several months—her entire fecal discharges having been scybalæ—I concluded that if Belladonna were given in doses sufficient to bring the system under its influence, and was followed up by a brisk cathartic, it might remove the trouble. It did so on the first trial, and she speedily recovered her health.

The last case I will narrate was one of obstruction to the flow of bile through the biliary ducts. A married lady had been subject for several years previous to frequent "biliary attacks." The one in which I saw her, in consultation, had lasted for

several weeks. She was completely jaundiced, and had been suffering for several days unceasingly from nausea and exacerbation of intense pain (generally in the afternoon) in the region of the gall-bladder. Sometimes she would vomit a small quantity of bile with marked benefit. Cholagogue cathartics, alteratives, etc., had been given without producing very decided amelioration of symptoms; and as the case clearly indicated obstruction and spasmodic constrictions of the biliary ducts, I suggested the use of Belladonna, and whether from the effects of the remedy or not, there was soon a marked change in her condition for the better. Her stools ceased to be clay-colored, and she steadily convalesced.

I call attention to the above cases which have come under my observation to elicit from those more competent than myself whether spasmodic constriction of the transverse fibres of the intestines, biliary ducts, etc., which seemed to have been the cause of the intense pain in the above cases, may not be controlled by large and frequently repeated doses of Belladonna.

ON THE PHYSIOLOGICAL ACTION AND THERAPEUTICAL USE
OF HENBANE, ALONE AND IN COMBINATION WITH OPIUM,
AND ON THE COMBINED OPERATION OF OPIUM AND
BELLADONNA.

Lecture delivered at the Royal College of Physicians, London, by Dr. JOHN HARLEY.

The lecturer commenced by describing the effects of increasing doses of sulphate of hyoseyamia when used subcutaneously. The following may be taken as a summary: When given to an adult, and in doses insufficient to produce dryness of the mouth, the only effects are giddiness, somnolency and dilatation of the pupils, and a progressive retardation of the pulse to that condition in which it exists after a prolonged period of complete rest of mind and body, without diminution in its force and volume.

In doses sufficient to produce complete dryness of the tongue and hard and soft palates, there will generally be an acceleration of the pulse ten or twenty beats, with a slight increase in its volume and power. This acceleration will be observed from

ten to twenty minutes after the injection. It does not usually continue for longer than twenty or thirty minutes, and rarely lasts for an hour; dryness of the mouth comes on about twenty minutes after the injection, and continues about an hour.

In most cases there will be great somnolency, attended with so much giddiness that the patient is either unable to walk without assistance, or reels about as if drunk; the face becomes slightly flushed, and the conjunctivæ injected; the pupils dilate. After the lapse of about an hour the mouth suddenly moistens, and the pulse, which, from the time of its maximum acceleration, had been observed to fall some five or six beats every twenty or thirty minutes, now falls with unusual rapidity, until, at the end of two hours from the injection, it numbers only sixty, fifty, or even forty-two beats, still, however, retaining its original volume and power; the giddiness and sleepiness slowly pass off, and at this time the pupils attain their maximum dilatation.

The effects are precisely the same when hyoscyamus, or its active principle, is given by the mouth. Compared with belladonna, hyoscyamus agrees with it in its effects upon the mouth and pupils. Its stimulant effect upon the sympathetic nervous system is only manifest in man in large doses, and even in this case it is comparatively transient and much less powerful than belladonna. The most prominent symptoms of the operation of hyoscyamus are excessive giddiness and somnolency, effects produced by atropia in only a very secondary degree. While atropia is chiefly distinguished by its effects upon the sympathetic nervous system, hyoscyamine is distinguished by its influence on the cerebrum.

It would appear that hyoscyamine with opium produces the most powerful hypnotic action possible. Each increases the effect of the other. Quantities of morphia and of hyoscyamine, which of themselves are insufficient to produce sleep, will, when combined, speedily induce that condition.

Like atropia, hyoscyamine is eliminated by the kidneys, and the lecturer stated that he had detected it in the urine twenty-

two minutes after the subcutaneous injection of $\frac{1}{15}$ th of a grain of sulphate of hyoscyamine.

Treating of its therapeutical use, the lecturer stated that he had found it serviceable in certain cases of epilepsy and enuresis, extremely valuable in irritable conditions of the brain and heart, and that it is especially useful in often determining, and invariably increasing, the hypnotic action of opium.

In treating of the combined action of belladonna and opium, the lecturer having previously determined the separate effects of atropia and morphia upon the horse, the dog and man, gave the results of their operation when simultaneously administered, or when the one remedy was allowed to precede the other by a variable time.

From numerous experiments upon the horse, which were made by Mr. Frederick Mavor, of Park street, and himself, he concluded that the reverse of any antagonism exists with respect to this animal; and he plainly proved by the experiments adduced, that the medicines not only intensify, but very much prolong, each other's effects.

The experiments upon the dog also led to the same positive conclusion. Some of them were peculiarly instructive. In one case, a quantity of atropine, which had been proved to be incapable of producing sound or continuous sleep, was given to the animal two hours after the administration of a subcutaneous dose of opium, and at a time when the dozy condition induced by the latter had passed off, the pulse being 78, respiration 18, pupils one-sixth contracting to one-seventh. Within five minutes of the injection of the atropine the animal was in a complete state of narcotism, and remained so without the slightest motion for the next four hours, and could not be aroused by pinching or pricking the skin, or by poking the finger down upon the glottis. The atropine effects, meantime, were extremely developed, and were much prolonged, and the dog continued to sleep soundly for three hours more.

In man precisely the same results were observed in all the cases treated with opium and belladonna, either simultaneously

administered or when one was given some time previous to the other.

The lecturer could come to no other conclusion than that, as far as a hypnotic influence was concerned, belladonna decidedly increased the effects of the opium, and on the other hand, opium invariably intensified, not one or two, but *all* the effects of belladonna.

One important fact, however, resulted from the numerous experiments which we had made upon the dog and upon man. In a large proportion of patients he found that the subcutaneous use of morphia was followed by faintness, nausea, increasing to vomiting and violent retching, with weak and often intermittent action of the heart, these distressing symptoms lasting for many hours. When, however, a small quantity of atropine (the $\frac{1}{8}$ th of a grain) was administered with the morphia, these alarming effects never followed.

He explained this fact by attributing to the atropia such a powerful stimulation of the sympathetic nervous system as was able to overcome that derangement of the vagus nerve which opium so frequently produces. In other patients, in whom opium alone fails to produce sleep, the combination of opium and belladonna, whether given by skin or by stomach, procured the desired result.—*Medical Times and Gazette.*

RELATION OF THE CHEMICAL CONSTITUTION AND PHYSIOLOGICAL ACTION OF MEDICINE.

At one of the recent meetings of the Royal Society of Edinburgh, a very interesting paper was read by Drs. Crum Brown and T. R. Fraser, upon the influence of direct chemical addition upon the physiological action of substances. This paper is the first of a series which may be expected to throw great light upon one of the most interesting questions which can suggest themselves, viz., the relation existing between the chemical constitution and the physiological action of medicinal and poison-

ous substances. That such a relation must exist, we can have no doubt; and, indeed, attempts have been made by some to establish the relation in certain cases. Hitherto, however, the subject has not received that systematic investigation which it is now receiving at the hands of the authors of the paper.

In order to arrive at any accurate knowledge as to the influence which chemical constitution exerts upon physiological action, it would appear to be desirable to take substances having a very definite and energetic physiological action, and then to perform upon them a chemical operation, having for its object the promotion of a definite change in the constitution, and to examine the modification which the physiological action has undergone. Such has been the plan which the authors have pursued; the bodies which they have chosen for examination are the more active of the vegetable alkaloids, and the chemical operation, of which they have studied the effect, has been the direct addition of iodide of methyl. It was shown by How that, when iodide of methyl acts upon strychnia, brucia, morphia, and other alkaloids, it adds itself to them, and beautiful crystalline bodies are produced which differ considerably in character from the salts of the alkaloids. The authors have already examined the physiological action of the bodies produced by the addition of iodide of methyl to strychnia, brucia, morphia, thebaia, codeia and nicotia.

The iodide of methyl-strychnium is prepared by first treating finely pulverized strychnia with a solution of carbonate of potash in dilute alcohol, and then adding an excess of iodide of methyl mixed with about its own volume of rectified spirit, and digesting in a flask for twenty-four hours. The spirit is thereafter distilled off, the residue dissolved in water, and crystallized. It is well known that doses of strychnia, varying from one-twentieth to one-thirtieth of a grain, rapidly produce in rabbits most violent convulsions, and in a few minutes kill the animal; the phenomena produced being due to a localization of its action on the chord. It was found that twelve grains of iodide of methyl-strychnium, when administered (by subcutaneous injection) to

rabbits weighing three pounds, produced no effect whatever. Fifteen grains produced symptoms, and twenty killed; but the animal died with symptoms altogether different from those produced by strychnia. In place of violent and spasmodic convulsions and muscular rigidity, the appearances were those of paralysis with complete general flaccidity. The spinal motor nerves were either paralyzed, or speedily became so; and, instead of the speedy occurrence of muscular rigidity, the muscles remained flaccid, contractile, and alkaline for several hours. In short, by the addition of iodide of methyl to strychnia, the toxic properties of the latter are diminished about 140 times; and the body produced possesses the physiological action of curare, viz., paralysis of the end-organs of the motor nerves.

Similarly, Brown and Fraser have discovered that the toxic properties of brucia, thebaia and codeia are immensely diminished by the addition of methyl; and that the bodies produced, instead of being, as all three of these alkaloids are, strongly convulsent, possess, on the contrary, the physiological action of curare. Morphia, as is well known, possesses both soporific and convulsent properties; its toxic action is much diminished by the addition of iodide of methyl; its convulsent action is destroyed, but its soporific action remains. The above are amongst the chief results which have been obtained by the authors, and appeared to possess such interest as to warrant my drawing the attention of your readers to them.—*British Medical Journal*.

COBRA POISONING.—Peter Hood, M. D., describes in the *Lancet* a case of poisoning by the bite of a cobra in India, in which he tied the patient's hands to the back of a buggy, and drove several miles, obliging the man to run rapidly until nearly exhausted. The profuse perspiration thus occasioned was maintained by frequent doses of eau de luce, and the patient recovered. Continued and forced action of the heart and lungs seems the only mode of preventing the action of this terrible poison.

MEDICAL REPORTER.

ST. LOUIS, JULY 15, 1868.

St. Louis College of Pharmacy.—The annual circular of this institution accompanies this number of the REPORTER. We congratulate the pharmacutists of St. Louis upon the success of their endeavors in establishing a first-class School of Pharmacy in this city. The result is one in which they can feel a just pride in sustaining, and reasonably look forward to a continued and increasing influence in raising the standard of the members of their profession. Pharmacy is recognized truly as a science, and one that requires hard study and earnest application to master. Why, then, should not the practical pharmacist be recognized as a member of a liberal profession, and one of no secondary importance? He, as well as the physician, holds the life of his fellow man in his hands. To the perfect knowledge of his art, and careful compounding of the prescription, does the physician owe his success. Both are equally important branches of the curative art, each necessary to the other in the endeavor to relieve human suffering. We are glad to see the high stand taken by the pharmacutists of St. Louis, and trust, by their earnest support of their college, to see maintained the determination to require educated and qualified persons to fill the responsible positions of dispensing druggists. The Board of Trustees have just issued a new and most beautiful diploma to its graduates, and we trust it will be the pride of all good pharmacutists to be the worthy possessors of one.

The college has largely increased its facilities for instruction during the coming Course. The Faculty have also added a complete course of Physiological and Systematic Botany, which will greatly aid the student in his study of vegetable materia medica. They will also give elaborate instruction in the method of gathering and preparing the indigenous remedies of this

country, justly desiring to place our own native plants prominently before the profession. We understand, from present prospects, that the class this winter will be large.

For further information we refer to the annual announcement.

Department of Medicine and Surgery of Willamette University, Salem, Oregon.—We have received the annual announcement of this young but enterprising medical school—a pioneer in the far West—and we extend to them a fraternal greeting. We extract the following from their circular:

The third course of lectures of this institution will commence on the 4th day of November, and continue four months.

The medical department is now established as a permanent institution; and in order to keep pace with the progress of medical science and the increasing patronage of the institution, the Trustees have deemed it necessary to add two more Professors to this department. The confidence reposed in the Faculty by the profession, and the manner in which they have discharged their duties, have elicited the highest commendation; therefore the Trustees and Faculty are fully determined to make the institution one of the highest rank, and a school of sound medical learning and practical acquirements. In pursuance of this end, we have added such appliances as necessary to demonstrate fully and clearly each and every branch.

The means of illustrations in each department are ample, and the course of instruction thorough and complete. Material for practical anatomy will be supplied in abundance.

Clinical instructions will be given twice a week. Surgical operations performed in presence of the class. Clinical advantages of this college are good for a new country. The County Hospital and State Penitentiary, with out-patients, afford to the class a large amount of material for clinical study.

The following are the Medical Faculty:

H. Carpenter, M. D., Professor of Clinical, Operative and Military Surgery.

A. M. Loryea, M. D., Professor of Principles of Surgery, Fractures and Dislocations.

E. R. Fiske, A. M., M. D., Professor of Practice of Medicine and Clinics.

J. W. McAfee, M. D., Professor of Clinical Medicine, Diagnosis and Hygiene.

D. Peyton, M. D., Professor of Obstetrics and Diseases of Women and Children.

J. H. Wythe, A. M., M. D., Professor of Physiology and Pathology.

J. Boswell, M. D., Professor of Materia Medica and Therapeutics.

O. P. S. Plummer, M. D., Professor of Chemistry and Toxicology.

A. Sharples, A. B., M. D., Professor of Descriptive and Surgical Anatomy.

Hon. J. H. Mitchell, Professor of Medical Jurisprudence.

M. B. Lingo, M. D., Demonstrator of Anatomy.

Pepsine.—Among the results of the application of science to the practice of medicine, none appear to promise more important results than Pepsine, the digestive principle of the gastric juice, which, in a purified state, and mixed with some inert vegetable powder, or dissolved in wine, or made into a lozenge, forms a valuable medicine. It appears that the use of this important agent is greatly increasing as the knowledge of its effects becomes more widely diffused. A few grains put into a wine glass with some water forms at once an artificial stomach in which food may be digested, and in this way the relative value of different samples of Pepsine may be determined. At a lecture that was delivered a short time ago at the Society of Arts, by Dr. Letheby, an experiment of this sort was made, in which large quantities of animal fibrine were digested in bottles during the lecture, with English (Morson's) and also with French Pepsine.—*Extract from the Morning Herald and Standard Newspapers.*

Cincinnati College of Medicine and Surgery.—We would call attention to the announcement of this institution, which will be found in our advertising department. It has an able corps of Professors, fully covering every branch of medical science. We have only to regret the very low fees charged for the Course. Would that our medical colleges could be more uniform in that respect.

New Regulations to insure Attendance of Medical Students upon Lectures in England.—The Medical Teachers' Association of England have adopted a rule requiring that no Professor sign any schedule necessary to admission for examination before any of the examining boards, unless, by the system of marking recently adopted, it appear that the student in question has attended at least two-thirds of the whole number of lectures comprising the course represented by the schedule or certificate.

VITAL STATISTICS OF ST. LOUIS.

For the month of June, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	159	Still Born.....	84
White Females.....	120	Under five years of age.....	146
Colored Males.....	14	Between five and twenty years...	26
Colored Females.....	17	Between twenty and forty years...	84
Born in the United States.....	240	Between forty and sixty years....	85
Born in Germany.....	50	Between sixty and eighty years...	15
Born in Ireland.....	41	Bet. eighty and one hundred y'rs	4
Born in other countries.....	18	Total.....	344

DISEASES.

Abscess.....	1	Gastritis.....	3
Apoplexy.....	9	Hemorrhage.....	1
Atrophy.....	5	Hepatitis.....	4
Bronchitis.....	2	Hydrocephalus.....	1
Burns	1	Hydrothorax.....	1
Cancer.....	3	Inflammation.....	2
Carditis.....	2	Jaundice.....	3
Cerebritis.....	6	Labor.....	2
Cholera Morbus.....	6	Laryngitis.....	2
Cholera Infantum.....	20	Marasmus.....	5
Convulsions.....	26	Meningitis.....	15
Congestion of Brain.....	10	Metritis.....	1
Debility.....	7	Old Age.....	3
Dentition.....	8	Paralysis.....	1
Delirium Tremens.....	2	Peritonitis.....	5
Disease of the Heart.....	6	Phthisis.....	37
Diarrhoea.....	8	Pneumonia.....	10
Diphtheria.....	1	Poison.....	1
Dropsy.....	9	Premature Birth.....	3
Drowned.....	4	Rheumatism.....	1
Dysentery.....	9	Scurvy.....	2
Enteritis.....	6	Scarlatina.....	2
Epilepsy.....	1	Serofula.....	1
Erysipelas.....	1	Stroke.....	3
Fever Intermittent.....	7	Syphilis.....	1
Fever Remittent.....	6	Tetanus.....	6
Fever Puerperal.....	3	Tri-mus.....	2
Fever Typhoid.....	14	Ulceration.....	4
Gangrena.....	2	Wounds.....	3

Total number of Deaths for June, 1868.....420

Total number of Deaths for June, 1867.....335

Total number of Deaths for June, 1868.....344

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

VOL. III.

ST. LOUIS, AUGUST 1, 1868.

No. 11.

ON THE CHARACTER OF OUR INVARIABLE NOTION OF TWO
KINDS OF BLOOD, VIZ.: VENOUS AND ARTERIAL

By Prof. RUFUS KING BROWNE, M. D., of New York.

The excelling importance, exceeding that of all other given realities in the field of physiology, and hence of pathology, is rectifying the above error, because from it has arisen the notion that there are two kinds of blood, of remarkably different composition, character and function in their relation to the various tissues: *two* kinds, namely arterial and venous blood.

From the supposition that there is a process by which the blood "darkens," is begotten our habitual notion that the blood is "changed" from venous to arterial, and, during this darkening, is turned to a fluid of different properties.

The supposition thus begotten of our false notion of *two* changes of color as its source, is designated the conversion of the blood.

This conversion is a darkening of color and a change of properties. And from this it is seen that the supposition of a darkening of color leads to that of a change of other properties.

To state it more specifically: we suppose that a conversion of the blood, indicated by its change of color, takes place, by which arterial blood undergoes a change into another kind of blood, blood of decidedly other properties—i. e., venous blood.

No great departure from the limits of scientific truth would have ensued from the notion of there being in the veins another

kind of blood than arterial, provided our description of venous and arterial blood involved an appreciation or understanding of exactly what the character of the difference in blood of arteries and veins was.

But just this fallacy of observation it is, namely, the fallacy of this change of color from bright red to dark, which enters us upon holding the idea that there is a more or less radical difference in the two. From this difference of color of the blood in the arteries and veins, we suppose a difference in the character of the blood fluid in arteries and veins, the difference in color being, as we suppose, a manifestation of a difference due to some change or conversion of the blood from a compound of one character to a compound of an entirely different character and grade.

But let us illustrate this fallacy more distinctly, in order to show that the blood undergoes no such transformation of its ingredients in passing from arteries to veins; and that as it undergoes no change of color after leaving the lungs, and before entering the veins, but only while in the lungs, so it undergoes no transformation of its component substances which make them two, each another kind of blood, different to the other.

As the ancients regarded the arteries and veins as occupied by two fluids of entirely different character and course, so we repeat the lesson, with slight modification.

At the outset, then, we must apprehend that the blood in the veins is bodily precisely the blood which, less advanced on its course in the vessels, is arterial, while at the same time this arterial blood is precisely what, on entering the lungs, is venous.

In this statement the difference admitted simply designates, *not* that the blood differs by *any change in it* of any kind, which transforms what is one kind into what is another kind of blood, but simply by ingress to and egress from, by addition to and subtraction from, its elements, of substances going away from and coming into it from other sources than the blood itself.

In other words, the *otherness* of each does not consist, as we suppose, in a *conversion*, or transformation, of the substance of either, thus constituting it a fact of chemical change, producing

from one set of substances another compound of substances, but resides wholly in the income of other substances from the outside, and the exit of its ingredients passing off from the inside.

The differences in blood, we already see, due to these two widely distinct sources, must be much unlike, the one being a *process* by which the blood in any part of its course is *transformed* to a compound of substances, found to be different at a further advanced part of its course; while the other is untransformed, but changed by the addition to it of certain substances, and the removal from it in part of its own substance. In the one case the blood is transformed by an interior and intrinsic process within its ingredients, while in the other any variation in its character is due, without any such process, to substances received by it, and substances which leave it.

Hitherto we have assigned to this supposed transformation of blood ingredients the making of the arterial venous; and although we have at the same time admitted the addition to and subtraction from the blood in an unspecific way, we have, nevertheless, regarded the former as the source of the venous blood as one fluid, and of the arterial blood as another.

But the truth is demonstrably the reverse, for it is to the latter source, and to it alone, that any diversity or dissimilarity of character of the blood in different parts of its volume is due. Contrary, then, to the lessons which we are invariably taught upon this subject, it is to these additions and abstractions, and to these alone, that any variations in the character of blood is to be traced, and apart from these no changes of blood occur.

In the first place, then, no conversion or transformations in blood exist of substances which, constituting blood of one character (arterial), are by such conversion made over into constituents, forming thence blood of another kind (venous).

This theorem, if true, entirely disproves our long-taught notion of two kinds of blood, one as yet unconverted and the other converted, or blood of one kind, the net production of one conversion, and blood of another kind the net product of another conversion—the conversion in either case being consummated, as supposed, in the newly instituted characters.

And, secondly, whatever the changes which take place, and these are not *transformations*, pertain exclusively to the blood we call venous.

In representing the facts formularized in these propositions, we shall not fail to recognize all of those pertaining to either. This we shall be constrained to do in order to make evident that no conversion or transformation of substance of the blood, by which two kinds are formed, takes place.

The question likely first to present itself is, does not arterial blood undergo a conversion or change? And the answer is, certainly not; for the change which takes place in the blood in the lungs, which we suppose converts it into another kind, namely, arterial, is not a *conversion*, but simply a change of color.

But if this be *not* a conversion of substance, what is the nature of what you call a change, not a conversion? Omitting here a complete definition of the character of this change, the answer is, that this change consists in the coming into contact with the globules of the oxygen. And the change which is consummated in the fact is not any conversion of substance, but a change in color (of that color already existing) of the globule. And it is the entire void hitherto existing of any apprehension of the very gross difference and unlikeness between the character of this act and a conversion of substance we have so erroneously supposed the act to be, or to result in, that leaves room for the altogether false notion that in it the blood is changed, or turned from one kind to another kind—meaning by the word changed, so converted.

But if this be not a conversion, what is conversion in such or similar cases? The answer to that question is what we ought to have gained long before we named any phenomena a process of conversion; and it is an example of our well-nigh invariable habit in matters of this kind of naming phenomena, while we do not understand what they consist in, what their characters are, to a correct appreciation. In the same manner we use the word changed here intelligently.

I know very well that this incoming of oxygen is called a union of the oxygen with the globule, but with how much knowledge is plain from the above examples. In any conversion the converting substance must take hold of, and unite with, what is to be converted. This, in fact, constitutes much of the process itself. And the substance consequent on this union must be different from what each was by itself. Was there ever any imaginable conversion that did not at least present these features?

I know, too, that various and contradictory characters have been imagined of this supposed conversion; as, for example, that the oxygen is in "union" with the globule, and "produces" carbonic acid, that it nutrifies the globule, and yet that it is carried by the globule, and there *delivered to the tissues*. One is dissolution of globular form and substance, the second is increase of substance, and the third is no union at all. Of course the latter explicitly contradicts the former.

For what sort of a union is it in which the parties are free to leave each other, as the oxygen does the globule? If we call this a "union" at all, it is only because we use the word in an accommodated sense, and in the absence of any other term which accurately designates the transient tenure of their contact. But, meantime, let us not be unmindful of the fact that the oxygen leaves the globule precisely as it was, in form and substance, neither of which it has affected, and, consequently, not converted. The oxygen has not united with the globule, but only been carried by it into other parts of the blood channels, where it unites, properly spread throughout them, with other materials of the blood.

We see, therefore, there is no transformation nor conversion of the blood leaving the lungs, by which it is made into another kind of blood from that which enters them. In short, that there is nothing enacted here which separates the fluid on one side of the line of supposed conversion from the other, making them two bloods.

But you say there is a change which occurs. What is the nature of this change, which is not a conversion? This change,

i. e., the fact, or event, or phenomena, correctly designated by that term, which never stands where it is properly used, and where one has the true idea of a change, for conversion, is simply a passing affection in the *color* of the globule. It is not done at the expense of the globule, neither does it involve the least loss of the globule or conversion of any of its constituents. It is confined to the globule, and is due to the entering oxygen. So long as the oxygen remains with the globules, that is, until it is spread by their advance throughout the ingredients of the plasma, it exists, and no longer. It consists in nothing whatever beyond a mere change of color, and is no extraneous color intromitted into the globule, nor *produced* by a fancied color-making power of the oxygen, for none such exists. Even those who entertain the double fancy, that colors in the globule are produced by oxygen, would not fancy that it could produce color in a colorless or uncolored globule. And in the case of the red globule, it can only be the agent of this change, because the globule has its color by formation, freed from any participation of the oxygen. The oxygen, therefore, in the very constitution of the globule, has furnished to it all the materials for this change of color, among which must be the color, or the color substance, itself. This color substance, existing in the globule by the very act of formation, is capable from its constitution of a change. Being purple red, or what we call venous, on the utterly mistaken assumption that it is the product of a change from another hue, it will change to bright red. But it does not hold to this change. It does not remain so changed throughout the circuit, but only while the oxygen is with it; then it ceases that hue, and is its own proper hue. This hue, called venous, we suppose to be caused, not in the anatomical formation of the globule, but by carbonic acid, long after the globule is a completed anatomical form, and in the full round of its functions as a carrier of oxygen. Hence, when we come upon by sight, or reach the point following the flow, where it invariably appears, namely, in the capillaries and veins, we think it a color, *not* which has merely undergone one change of color in the lungs, but another change from the first change, in the situations

where it is found, and the color as belonging to blood which has undergone a conversion of substance. No supposition can be more opposed to facts.

No where in any statement of the case has it appeared that we have ever recognized any color of the globule by formation. Yet, even while void of its recognition, if we were questioned as to its existence, we would (unless we withheld the admission for argument sake) admit that the blood globule must have this color, as much as muscular substance has its.

Yet which is it?—for our sole notion of the color of the blood is of colors not at all of this character or origin. Can we have recognized the two colors of blood in their true characters if we have not identified either of them as the original color of the globule, but only as colors which arise in its later experience—colors which are the supposed products of extraneous substances it meets with?

Moreover, if the globule has a color embodied in the very act of its growth, can it have *two colors*, neither of which (as we suppose) are so embodied, but only exist by changes? These questions once formed, must remain without recognition or answer, unless we disembarass ourselves of our present notion. And the one sole way of doing this latter is to recognize the one sole fact, that the case is strictly one in which the blood having such a color, it undergoes a change in the lungs, by the addition of oxygen. Seen so far, then, that it has *one* change, it need not be pointed out that beside this, and consecutive to it, the constitutional color must itself appear in its unchanged character; and that the one variation of hue, effected innumerable *times* in the lungs, is the only change, miscalled conversion, which it undergoes. That, being one kind of blood, implying another kind, it undergoes a change or conversion, unlike what it was before, is totally fallacious, for neither in color nor substance does any such change or conversion occur in arterial blood.

We see, therefore, that there is no one kind of blood and another kind, each of which is different from the other, caused by an alteration of any substance converted within its volume; for venous blood, except by increase of substances, and hence

complexity of composition, by which enters from without, is unaltered arterial blood.

The blood of the veins receives from without substances of varied characters, conforming to the matters which change position in the surrounding tissues, from many localities, some distant from and others near to the heart. Besides this, the blood in these vessels continually receives a flow of fluid from the lymphatic canals and vessels, and occasionally from the secretions of the alimentary canal, mingled with the products of digestion. From the spleen it is increased by the addition of more or less soft, solid matters contracted there. But none of these additional substances are *conversions* of the blood, nor participants in any act of conversion in it. The transformations *they* have undergone are not a process transacted in and with the ingredients of the blood. They only replenish the volume, and add to the complexity of the characters of the blood, but do not convert its substances.

On the other hand the blood *loses* certain quantities of saline and watery ingredients, in all situations of the organism. It loses carbonic acid in the lungs, while the oxygen it receives there is only an accession to its substance, which produces no other conversion therein than change of color, by its adhesion or other form of connection to the globules, and eventually releases the blood to take part in the changes of the tissues surrounding the vessels. All these substances, after flowing through a certain route, become arterial, and all join and unite in the formation of that fluid.

The truth is, the accession of the oxygen intersects, or prevents, so to speak, the unremitting continuance of the dark color, so that but for the oxygen this continuance would be unbroken or uninterrupted. The oxygen continues this so long as it coheres with the globule. The bright red is what the oxygen has done, and the dark, natural color of the globule re-continues when this is, so to speak, undone; that is, the light red is a change the oxygen does. This which the oxygen does by its presence it *un-does* in the act of its absenting itself from the globule. We say that the blood *darkens*. This implies

that the bright red is its natural color. But the exact reverse is true. The red is only an effect, which has to be frequently repeated, and new supplies of oxygen, otherwise the blood would never brighten. Whereas its darkness is what it is by its very formation, and not by any subsequent experience.

We admit that this reddening is only of a very *transient* tenure; and when we do so, we do not mean that it is by itself permanent, and is only put a stop to, or made to be transient, by carbonic acid. No, we mean that in its very character it is transient.

We make this admission without discovering the force and position of the truth, or understanding it as a discovered truth, when we contrast the change made by oxygen and carbonic oxide. The latter makes a permanent change by contrast with the former, which makes only a transient one. The very statement of this latter fact implies the proof involved in the truth itself. This is evident enough, for if the oxygen joins the globule, and that junction signalized by the red is transient, not being put a stop to or *made* transient by another substance, it is transient because the oxygen makes it by contact, and stops it, or makes it to be only transient by itself *ceasing* its contact.

We admit this over and over again, without, however, in the least appreciating it as discovered truth (and this shows the radical difference between our ordinary unappreciative, and frequently unintelligent, acknowledgments). We admit it by affirming that the oxygen goes to the tissues, to do which it must leave the globule. We admit it, also, in another form of affirmation when we say it oxidises the tissues, to do which it leaves the globule. And each of these relations equally implies that the relation of the oxygen to the globule, which induces the redness, is transient, and that this change is wholly dependent on that relation. That it does not, and can not, be in process of existence in the globule *after the oxygen has left it*. Yet, notwithstanding the commission of ourselves to the truth of these utterances, we at the same time go on to contradict them by affirming that this bright red does not continue to exist after the oxygen has left it, by saying that the globule "darkens,"

which is saying that the bright red continues, only it has become darker, or deepened its color. And this we affirm, because we have previously denied that the dark red is the permanent organic or anatomically involved color of the globule, which re-continues and re-continues just as many times as this change has and does take place. But what, on this very showing, can be more evident than that this relation is *not* transient—that it is permanent; in which case nothing could put an end to it? And what this permanency is, and how it differs from the relation of the oxygen to the colored globule, thus demonstrating the exact truth of the case, is shown in the reddening of the globule by carbonic oxide, precisely as with oxygen. This relation is permanent. No other substance will bring it to a close. And this is because the carbonic oxide, which brightens the globule color, does not, and will not, leave the globule, but becomes occluded in it. The *permanency* of reddening of the globule by carbonic oxide, which makes perfectly evident the transiency of its reddening by oxygen in the lungs, is entirely due to its remaining occluded in the globules, while it plainly shows that the transiency in the case of oxygen is entirely due to its leaving the globule after joining it. Now, what is this transiency? What does it mean? The question is pertinent, because we need to *understand* what we mean, as well as to “mean” something. What is this transiency but a stopping, or arrest, or cessation of something?

Does this stoppage mean to leave the thing as it is, while continuing?—the phenomena still existing or continuing? The reddening by carbonic oxide is an example of this. This is not to stop the phenomena, but to continue it permanently as once done. Well, but this would be a continuing of the thing, and *not* a putting a stop to its continuance; or does it mean to stop the thing, which is continuing; to stop the very phenomena, thus leaving the conditions in which the phenomena occurs as they were before, that is, *without* the phenomena? It can mean nothing else than this latter. Now, what were the phenomena in the case in hand? The bright reddening with oxygen. And this is put a stop to. And what was the condition in which it

occurred? The dark red color. And as the putting a stop to this reddening leaves conditions as they were before, that is, vacates the phenomena, what was before was simply the dark red color. In veriest truth, the only other thing different from the case of carbonic oxide, which is a *continuance* of the phenomena once done, and which it does not mean, is the vacating the phenomena itself. And as it was this phenomena which the change of things consisted in, to vacate this phenomena is simply to leave things *unchanged*. To leave them, in short, with no phenomena in the case. This is a precise representation of the case in the phenomena of change of color by reddening of the blood in the lungs, (the only change of color which occurs in the blood). The accession of the oxygen to the globule induces the phenomena of change, its secession; stops the phenomena, stops the change, leaving the blood color *as it was*. No other element, for the occurrence and after cessation of changes, is demanded, or can be placed here. And are not *all* the other elements of the case accurately repeated? I know, of course, that while we are possessed by the error, this "color as it was," namely, the dark, is a color not intrinsic to the globule, nor the visage of its most lasting organic matters, its very stuff and tissue, but is an effect produced by carbonic acid, we will look for not only what accounts for the occurrence and cessation of the change of color, not only for what represents that, but also for something else which accounts for this "color as it was," this dark red.

But this is only because of our erroneous notion of the origin and characters, or tenure of existence, of this color. If we are not in error, however, we see that this color is accounted for when it is shown to be that of the original substance of the globule—its invariable color, when not subject to either carbonic acid or oxygen. And as it is not a mere change or conversion of a color, it exacts no such supposition of carbonic acid or other substance, after being red, to give it existence. If our erroneous supposition that it has to be given existence to, or produced to sight, is entirely wrong, then it is necessarily of the same wrong to suppose any substance, such as carbonic acid, to

produce it. If, again, it is not so produced, but exists otherwise, then there is no act of any substance in the circulation which so produces it. Or, in other words, if the dark red hue is the color of the substance of the globule, anatomically made without carbonic acid, then the supposition that it is a product of carbonic acid is purely imaginary, entirely void as the representation of a fact.

The only thing in the case we have to answer for is, why does this dark red color, this venous hue, if it be the color of the globule, and no change in a color, not appear constantly instead of repetitiously? This question we have already answered substantially in discriminating the "change" in it by oxygen from our supposed changes, and in representing that one of these, erroneously called two, changes of color was in reality no such thing, but was this dark red hue; but we shall answer it again in another form. We *said* the oxygen changes this dark red color. We further *said* that in this change it, so to speak, presents the undisturbed continuation in appearance of this color; that it interrupts or interferes with this unchanged appearance. We *say* this change lasts a certain time, during which the changed color appears. If it is changed, how can it appear as it is when unchanged? Do we look to see the dark red and bright red appear simultaneously? This change takes place any number of times; each time oxygen is taken up by the lungs. Between these times are necessarily intervals, when and where only the color unchanged appears. After every change the dark red *re-continues*. This is an all-sufficient statement of the case.

To be sure we have never understood the truth of the case, nor even yet come into possession of the facts developed by experiment, which would have helped us to the truth. We *have* known that oxygen would join the globule of venous blood, but this imperfect knowledge has only been a source of endless embarrassment to us (arising from our unbroken habit of supposing that this junction was a case of oxidation), because we have not known nor suspected that the same oxygen, when passing through the plasma, will leave the globule to really

unite with its ingredients. But the experiments of Stokes have displayed the fact that it will invariably do so. Nor have we known that the moment this occurs the blood previously bright red is dark red. Thus showing that this separation or disjunction of the oxygen from the globule, *leaves* the latter as it was (and the color as it was, venous), though the junction of the two had "changed" it.

Neither have we known that carbonic acid takes no part whatever in this change of color, because it does not enter the globule from the plasma; and if it did, can not effect its color at all, and hence can not darken the blood. And hence that the blood is dark, not because any process or act of carbonic acid has darkened it, but because the coloring substance of its make-up is of the darkness of venous blood. *Had* we known these facts, we might have been excessively slow to apprehend their true character, unless especially set forth as represented in that character; but at least we would not have been in the predicament we are.

One word as to the exact character of the "change" the red globule of venous undergoes by oxygen. The change of color in the blood is a change solely in the globule. The exact character of the relation of oxygen which induces this change of its color (always venous when the two are not so directly related) we do not understand. We do know that it is not a "union," anatomically nor chemically speaking, and that the oxygen is not occluded in the globular substance.

As to the reddening, it may be a transient change in the mere shape of the globule, thus affecting its relations to light and causing it to appear of a brighter red than when venous. However this may be, it leaves totally unaffected the certainty, that instead of being of *two* colors, and these colors being a change in another change, it has but one original color, called by us venous, which is *subject* to a change called arterial.

We may be helped to some apprehension of this change of color by an analogous case in a chemical compound. If a certain cyanide of mercury, which is of a yellow faintly reddish color, be subjected to the friction of a knife passing over it, it

will become red. On the application of a very slight artificial heat, its proper color will be re-continued. And this may be repeated any number of times.

If, however, there seems any obscurity about this to the reader, let him at least do the problem the justice to reflect upon it and not leave it in this state. And we are sure he will consult his intellectual advantage by doing so. It may be that it is just here, where he has hitherto supposed the blood to actually darken, and where we say that it does not so, the obscurity lies. The very word darkening is such a misnomer without our suspecting it, that it greatly promotes our being misled, even if it be not the actual cause of it. The word describes a process—an act in process, as that of *coloring*, of dyeing or staining some substance. And we do not reflect that we do not see in this any process whatever. What we see and what only we see, stated to the uttermost, is red blood on one hand and dark blood on the other. All beyond this, which is precisely what we assume in the term, is what we *infer*.

What we mean by the darkening, therefore, is to affirm this coloring process we infer. But no such process takes place. What if this inference is the very mistake? What if no darkening process occurs? What if the blood is precisely the dark color we suppose this process of coloring to be, *always* dark, except when brightened by an adventitious substance, oxygen, which takes no part in its constitution? And more than this, what if this color, which we suppose to be effected by a process of darkening, when brought into contact with oxygen, is, so to speak, overpowered for the time being by that substance, but only to re-continue after the oxygen is parted from it? This is precisely what the fact is. There is no darkening. The venous globule has had no coloring done to it; has had no coloring imparted to it; nor any conversion of its substance which darkens it; nor had any substance imparted which is, or appears to be, dark. The dark color we see, which we erroneously infer to be the end of the process of darkening, is precisely the dark it is in virtue of what is *made* in it. Surely there is no obscurity about this. Surely no topic which requires

the least reason is plainer than this. What else is there can be possibly imagined? Only this: even if the carbonic acid, in imparting itself to the globule, imparted a darker color, and kept this up to the lungs, as it would leave the globule there, must not the color so imparted cease there to be any longer imparted, and the globule cease to be dark, because carbonic acid left it? Will the dark color stay whence the substance in which it was imparted is gone? Surely it is not in fact gone, as it inevitably would be if carbonic acid imparted it. Surely it continues; is not gone, and is there where the oxygen finds it; is there, although the carbonic acid is not with it, and was there when the carbonic acid was not with it in the capillaries.

Probably, however, the reader is not satisfied that, as heretofore shown, the oxygen, finding this dark color of the globule when it enters, left the dark color as it found it. Why not? He may say, "although the oxygen leaves the globule, it does not do so *until* the carbonic acid enters it. *This* darkens it, and hence it finds it as it leaves it." Not so, because the oxygen did not *find* carbonic acid in the globule, so that this is not leaving the globule as it found it. The reader could not, we imagine, possibly state his own supposition more adroitly, argumentatively considered, for himself than this. Let us ask if he recognizes that the globule has a coloring substance, its *own* coloring substance as a tissue, apart from any which can be imparted (as supposed) to it by either carbonic acid or oxygen? Let us deprive the blood of both these, and will not the globule, as long as it remains, present that coloring substance? This coloring substance, then, remains when both are excluded from the globule; or, if he supposes the contrary, if he supposes the globule to be colorless by origin, and only has color imparted to it by oxygen and carbonic acid, how happens it that the globules of the blood which are colorless are not colored by these two coloring substances in contact with them? If, moreover, the one of these globules *has* color when deprived of both oxygen and carbonic acid, and the other, the colorless globules, are uncolored, while they both are present, it does not appear that the first set, namely, the red globules, are in any sense dependent for color

on either carbonic acid or oxygen, for these globules have it without them; nor that they actually give, or even communicate, color, for the second set are uncolored by them. How, then, can we, without evident error, assign to them the actual making of two colors in the globule? Yet, notwithstanding the demonstrated fact that a color of the globule exists independent of them, this is precisely what we do in what has been said above; for it was then said, in opposition to our affirmation that the loss of the oxygen led to the dark color, that the oxygen made *its* color *for* the carbonic acid to darken, while, consecutively, the carbonic acid made its color *for* the oxygen to brighten. And it is very plain that although we call these "changes," we make the change to consist in the alternate production, each *for* the other, of the dark red and light. And in this no recognition was made of any color not so produced. On the contrary, the fact of any such color was totally excluded as unknown by the nature of our supposition. Moreover, it was said that each of these substances were coloring substances; and though we showed the exact contrary, it is again affirmed that they are so, for we assign all the color there is to them, since the *changes* asserted of them we find rigidly to consist in each making the color *for the other to change*. This being our representation, it will not better us in our error to affirm that they only *change* color, and do not produce either, because in that case what color there is (if we disclaim they produce any) must exist from some other source, and, what is more, be of another character and make-up. And if this must be true, then from this source there can not be two coloring substances, but only one, and that of entirely different tenure from the supposition. In fact, by these emendations we renounce of any such mode of colors arising, as well as any two colors so arisen. Moreover, if we disclaim or deny the production, and only claim the two changes, these changes, as we represent them, consist, or in fact constitute, the very existence of two colors. These changes constitute the very woof and warp, the whole existence, of the colors as well as changes themselves, for each change provides or furnishes a color, the one *for* the other to change. Each

change alike being the effect maintained in one color, and wholly consisting in that effect, brought up to and *for* a similar effect thereupon to ensue in another color. Each *pre-supposing* as its condition the color effect maintained by the other. So the change assigned to carbonic acid consisted in its maintaining its dark color effect on the red color, while on the other hand the change assigned to oxygen consists in its maintaining its light color effect on the dark color, and so on in uninterrupted turn. It is evident from this exposition that in denying the production of the two colors (thus denying the production of either one or any color in this way) we simultaneously deny the previously asserted character of the two changes, because they can only exist with such production; the change, in fact, constituting production as well as change. But it is unnecessary to continue this exposition, since it must be apperent to the reader that we encounter these contradictions solely because there are no such data as either two colors or two changes. And, moreover, from this we see that if the oxygen leaves the globule, it must leave what it found there: for, first, if it produced any change that could only exist for the time being while the oxygen was there, second, it can not create or produce any color not subject to change, or which does not desist from being the instant the oxygen leaves hold of the globule.

From this, at least, we see that there are no two colors of the *blood by production*, but only a color by formation; that there are no two changes, involving such two colors, and that the character of what change there is does not at all involve any production of color, but is merely a transient modification in it; that this modification or change, involving no further *coloring* by accretion or otherwise, does not cause the color there to desist from being, even for the time being, but merely modifies its aspect, so leaving the color to re-continue under its unmodified aspect when the change is over.

M. Roussin has proposed the use of bi-chloride of mercury for the detection of kreatinine in urine; kreatinine is precipitated from its solutions by the mercurial salt.—*Chemical News*.

CARBOLIC, PHENIC AND CRESYLIC ACIDS. A NEW, READY AND PERFECT MODE OF EMBALMING, AS EXEMPLIFIED AT BELLEVUE HOSPITAL DURING THE PAST FOUR MONTHS. ALSO ITS USES AS A DISINFECTANT AND PREVENTIVE IN CONTAGIOUS DISEASES.

By JOHN J. CALDWELL, M. D., of Brooklyn, New York.

During the past few months it has been my pleasure to have several invitations to be present at Bellevue Hospital College to witness the new process of embalming, before the Faculty, by simply washing the corpse with a solution of carbolic acid of a certain strength, which must not be too strong or yet too dilute. If too strong, it becomes so caustic as to destroy the tissue, and render its minute structure one common mass by coagulation. The proper strength can be determined by making the solution moderately strong, say one part of the acid to one-hundred parts of water, and then dip a portion of muscular tissue into the solution and add the acid until it gives the tissue a red and natural appearance, and then, under the microscope, you will have the minute structure in all its beauty. When strong enough it cauterizes and coagulates, giving the substance the same appearance as a free application of caustic silver. Although the patentee claims, as the following from his circular will show, that "it is simply a wash, the body is not mutilated in any way, no injection is made into the veins, no cut or incision is made upon the body, it is a disinfectant," and other virtues in his compound, we have not been able to discover, in the many *post mortem* examinations and dissections at Bellevue, any other trace, track, smell or taste than simply that of carbolic acid, or creasote of coal-tar, or, as the chemist calls it, the hydrated oxide of phenyle.

We will now turn to the different dissections made before the medical savans of New York and her suburban cities. First, a body of one month's preservation; second, a body of two months' preservation; third, a body of three months' preservation; fourth, a body of four months' preservation; and others of intermediate space of time. Under this simple form, in each case, the results were uniform: the skin soft and pliant, with the epithelium intact, the body rotund and plump, expression good

and natural, the joints free and easy, and upon dissecting the brain it was found sound and free from odor, save a faint smell of coal-tar. Even the fluids were preserved. The same may be stated of the lungs, liver, intestines and spleen, the blood and blood-disks, muscular, fatty and cellular tissues. Even in a subject who died of tubercular disease of the lungs, seventy-three days after death the abscesses of the lungs had not undergone any change, and laudable pus was found from broken-down tubercles. This fact alone struck all present with wonder and admiration. During the whole of these exhibitions, the microscopic and chemical agents were freely used and commented upon, and in all cases the muscular striæ and cellular development were perfect. Dr. Doremus, Professor of Chemistry and Toxicology at this college, said "he had the honor of embalming Archbishop John Hughes, of New York, and had witnessed the same ceremony in the case of the late Archbishop of Paris, and in many other cases in all circumstances of life, but he never witnessed any process approximating the beauty and perfection of this new mode now being introduced by Mr. Clarke, for with all other methods there would be some discoloration from the metallic injections, and a mutilation of some kind in every instance."

Dr. Sayre, Professor of Surgery in this college, furthermore said that "he had never witnessed anything like it," and spoke also of the perfect state of preservation hereby secured.

Prof. Smith, of the same college, remarked a curious and striking incident in the case of a corpse of a little girl. When the solution was applied to the cheeks and lips, they instantly became so florid and life-like that the parents and friends could but believe that life still existed. This was simply due to some peculiar chemical change. The simple process of bathing and wrapping the body in clothes saturated with this solution, and injecting the natural cavities or openings with the same, certainly is an easy process of embalming, and a process, too, of vital importance to all mankind, and well worthy of a visit to our hospital for verification.

It is my opinion, and that, too, of many others, that to Dr.

Squibb, of Brooklyn, is due the credit of the introduction of carbolic acid and its compounds as a disinfectant, a styptic, and a preservative of surgical specimens; for it was through this celebrated chemist and pharmacist, while serving in large hospitals during the late war, that the medical officers' attention (your humble servant among others) was first called to its many good qualities. It was found then to arrest destruction, to destroy foul odors, to ward off the fly and maggot. Hence, in weak solution we used it to dress wounds, with the very best results; in stronger solutions we used it in scrubbing our wards and privies, in washing and disinfecting clothing, and for many other purposes. Dr. Squibb furnished us a very cheap article of this kind, well known in the market as "Squibb's Impure Carbolic Acid," with full directions as to its use.

The following extracts are from a lecture by Dr. F. Gracé Calvert, F. R. S., before the "Society for the Encouragement of National Industry," in France:

CARBOLIC OR PHENIC ACID AND ITS PROPERTIES.

The disinfecting, or rather antiseptic, properties of carbolic acid are very remarkable. The beautiful researches and discoveries of M. Pasteur have shown that all fermentation and putrefaction is due to the presence of microscopical vegetables or animals, which, during their vitality, decompose or change the organic substances, so as to produce the effects which we witness; and as carbolic acid exercises a most powerful destructive action upon these microscopic and primitive sources of life, carbolic acid, therefore, is an antiseptic and disinfectant much more active and much more rational than those generally in use. It is necessary that I should here make a few remarks explanatory of the distinctions between deodorizers, disinfectants and antiseptics.

Deodorizers.—All substances merely acting as such are neither disinfectants nor antiseptics, as they simply remove the noxious gases emitted from organic matters whilst in a state of decay or putrefaction, without having the property of arresting decomposition or fermentation. For it has been proved that the

source of infection or contagion is not due to noxious gases or bad smells (being merely indicative of its probable existence), but, as we shall presently see, to microscopic spores floating in the atmosphere, and which, by their ulterior development and propagation, are believed to be the true source of contagion.

Disinfectants.—Under this head may be classed bleaching powder, or chloride of lime, sulphurous acid and permanganate of potash; they first act as deodorizers, and then as disinfectants, but they must be employed in large quantities to thoroughly oxidize or act upon organic matters, so as to prevent them from again entering into decomposition; but still it is known that if the organic substances so acted upon are exposed to the atmosphere, they will again experience decay and putrefaction. They are, in fact, more destructive agents than disinfectants, and they are never antiseptics.

Antiseptics.—All of these, such as corrosive sublimate, arsenious acids, carbolic acid, &c., act as such by destroying all source of decay and decomposition; that is to say, they destroy or prevent the formation of the germs of putrefaction or fermentation, without acting upon the mineral or vegetable matters present. The advantage of their use is, therefore, that they act, when used in small quantities, upon the primary source of all organic matters in a state of decay; further, they are deodorizers, for they prevent the formation of offensive odors, and consequently they are antiseptics, disinfectants and deodorizers. The great advantages which carbolic acid possesses over all other antiseptics is, that it can not be used for any illegal purpose, as arsenic or corrosive sublimate may.

And allow me further to add, that disinfectants, such as chlorine, permanganate of potash, or Condyl's fluid, operate by oxidizing not only the gaseous products given off by putrefaction, but all organic matters with which they may come in contact; whilst carbolic acid, on the contrary, merely destroys the causes of putrefaction, without acting on the organic substances. The great difference, therefore, which distinguishes them is, that the former deals with the effects, the latter with the causes.

Again, these small microscopic ferments are always in small quantities as compared to the substances on which they act; consequently a very small quantity of carbolic acid is necessary to prevent decomposition. Moreover, carbolic acid is volatile; it meets with and destroys, as Dr. Jules Lemaire says, the germs or sporules which float in the atmosphere and vitiate it; but this can not be the case with Condry's fluid, chloride of zinc or iron, which are not volatile, and which act only when in solution, and are mere deodorizers. This is why carbolic acid was used with such marked success, and therefore so largely, in England, Belgium and Holland during the prevalence of cholera and of the cattle plague. Mr. W. Crookes, F. R. S., not only states, "I have not yet met with an instance in which the plague has spread on a farm where the acid has been freely used;" but he has also proved, by a most interesting series of experiments, that the gases exhaled from the lungs of diseased cattle contained the germs or sporules of the microscopic animals discovered by Mr. Beale in the blood of such animals; for Mr. Crookes, having condensed on cotton-wool these germs, and having inoculated the blood of healthy cattle with them, they were at once attacked with the disease.

As to the value of carbolic acid for preventing the spread of cholera, among many instances which I could cite, allow me to mention two special instances: First, Dr. Ellis, of Bangor, says, I have, in many instances, allowed whole families to return to cottages in which persons had died from cholera, after having had the cottages well washed and cleansed with carbolic acid, and in no case were any persons allowed to enter such purified dwellings attacked with the disease. Prof. Chandelon, of Liege, has stated, that out of one hundred and thirty-five nurses who were employed to attend upon the cholera patients—and they must have been numerous, for two thousand died—only one nurse died; but the nurses were washed over, and their clothing sprinkled with carbolic acid. In fact, the antiseptic properties of carbolic acid are so powerful that the $\frac{1}{1000}$ or even $\frac{1}{1500}$ will prevent the decomposition, fermentation or putrefaction for months of urine, blood, glue solution, flour

paste, &c., &c., and its vapor alone is sufficient to preserve meat for several days in ordinary atmosphere, and prevent its being fly-blown; lastly, $\frac{1}{10000}$ has been found sufficient to keep sewage sweet, for Dr. Letheby states that through the use of such a quantity of carbolic acid in the sewers of London during the existence of cholera last year, the sewages of the city were nearly deodorized.

Allow me to say now a few words on the medicinal properties of carbolic acid. This question deserves to be treated thoroughly, for phenic acid is susceptible of so many applications in this direction, its properties are so marked, so evident, and so remarkable, that they can not be made too public, and it is rendering a service to mankind to make known some of the employments of so valuable a therapeutic agent.

I would recall to you the words of the good and learned Gratiolet, and those of Dr. Lemaire, showing that carbolic acid is the most powerful acknowledged means of contending with contagious and pestilential diseases, such as cholera, typhus fever, smallpox, &c. Maladies of this order are very numerous, but in carbolic acid we find one of the most powerful agents for their prevention; for besides many instances which have been cited of me, I may add one where it was used in a family in which there were eight or ten children, and none of the family have suffered from these diseases except those who were attacked previous to the employment of carbolic acid about the dwellings in which such diseases existed.—*Boston Med. and Surg. Journal*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A TREATISE ON THERAPEUTICS AND PHARMACOLOGY OR MATERIA MEDICA. By GEORGE B. WOOD, M. D., Emeritus Professor in the University of Pennsylvania, and co-Editor of the U. S. Dispensatory, etc., etc. Third Edition. Enlarged and improved. In two volumes. J. B. Lippincott & Co.: Phila. 1898.

Professor Wood has laid the profession under additional obligations by placing the above work, revised, enlarged and brought fully up to the present advanced knowledge of medical science, before them. The works of but few authors have met with so universally a favorable reception as those of Professor Wood, and none more deserve approval. In this field of

therapeutics and materia medica, a specialty with him, his opinion has truly been recognized as a standard authority. The present work is devoted more especially to the subject of therapeutics, and the general action of medicines on the system.

As co-editor of the U. S. Dispensatory, the author can with appropriateness refer to that for the more complete *Materia Medica* proper, and to his *Practice of Medicine* for the special application of individual remedies to disease. In fact, his works form a kind of series, and the medical man should really possess them all to master the subject, and no American practitioner should fail to have them in his library.

The present work has been entirely revised, improved and enlarged. Besides many minor improvements, the author says, in the preface to the third edition, the following remedial substances have been treated of, and some at considerable length, to-wit: "Coca, Nitrous Oxide, Antimoniated Hydrogen, Gelsemium, Calabar Bean, Bromine and its Preparations, Lithia and its Carbonate and Citrate, Ozone, Peroxide of Hydrogen, Permanganate of Potassa, and Sulphurous Acid and the Sulphites, with Carbolic Acid, in their antizymotic relations. The progress of the science has rendered advisable the formation of two new classes, in order properly to arrange several substances of peculiar powers: one embracing the disinfectants, which now hold an important place among the means of encountering disease; and the other, named antizymotics, because endowed with extraordinary powers in arresting fermentative processes, which are recognized as exercising a most noxious influence in the causation of disease.

"The subjects of subcutaneous injection and the introduction of liquids into the air-passages by bringing them to a state of fine spray, are now for the first time considered, and necessarily involve the consideration of a large number of substances in their new application and use in treating disease. In fact, nothing new and interesting in therapeutics and modern pharmacology has been overlooked or neglected."

Thus it will be seen that the work is fully up to the most

advanced position of medical science. We most earnestly recommend it to our friends as the standard on the subject.

The appearance of the work is unsurpassed, being in Messrs. Lippincott & Co.'s most superb style.

THE BOOK OF EVERGREENS. A Practical Treatise on the Conifera or Cone-Bearing Plants. By JOSIAH HOOPES, Member of the Academy of Natural Sciences, of Philadelphia. Illustrated. New York: Orange Judd & Co., 245 Broadway. Price, \$3.

We are under obligations to the publishers for a copy of this very valuable monograph, the only one of any note on this really interesting subject. It fills a blank in our works on horticulture. The author in his preface says: "The principal inducement for publishing the present work was the want he himself felt at the commencement of his studies for something of the kind. There has not heretofore been an American work on conifers, giving a description of all the different species and varieties, that will endure the climate of the Middle States; and without wishing to detract from the merits of the few excellent works that treat upon this subject to a limited extent, he believes that the present volume will fill up a blank that has heretofore been much felt. In its compilation he has collected much valuable information from the most approved writers on the subject, and added his own experience and observation in a plain and impartial manner, with a view to aid in making a selection of the most suitable conifers for various situations and localities."

The engravings, some sixty-five in number, are excellent, and the work is in the publisher's best style. We most heartily recommend it to horticulturists, botanists, and all interested in such subjects. There is a full and complete index to the work, which adds greatly to its value.

LESSONS IN PHYSICAL DIAGNOSIS. By ALFRED L. LOOMIS, M. D., Professor of the Institutes and Practice of Medicine in the Medical Department of the University of New York, etc. R. M. DeWitt: New York.

A very excellent book of its kind, which we can truthfully recommend to the student. It makes no pretensions to originality, being merely a compend of other and more extensive works on the subject. As a text book in studying clinical medicine it is the most readily arranged for reference of any we know of; its condensation in this respect being its greatest recommendation.

MEDICAL REPORTER.

ST. LOUIS, AUGUST 1, 1868.

Iodized Syrup of Horse-radish.—Dr. Petit, speaking of Grimault & Co.'s (Chemists, of Paris,) preparation of horse-radish as a remedy for chronic bronchorrhœa, lymphatism and scrofula, says, in a late number of *The Tribune Medical*:

"The great infatuation in favor of the various kinds of cod liver oil having somewhat subsided, those who hold a sound and judicious opinion of its advantages and inconveniences have some chance of being heard.

"Without wishing in any way to disparage the cures effected by this medicament, we can truly assert that many persons can not keep it on their stomachs, and a still greater number support it with great difficulty, notwithstanding all the efforts that have been made to remove or mask its disagreeable taste. In these cases, which are very frequent, the physician is glad to have at his disposal an efficacious medicine as a substitute or adjuvant for cod liver oil. Grimault's Iodized Syrup of Horse-radish is such a desideratum.

"This excellent preparation, which combines the elements of the anti-scorbutic syrup of the official Pharmacopœia, horse-radish, scurvy grass, marsh trefoil, cress, orange peel, to which is added one ounce of iodine for every two hundred ounces of syrup, and in a state of organic combination analogous to that which exists in cod liver oil, is calculated to produce in all cases the most satisfactory results.

"I have prescribed it for many years past, and I can affirm that it has never disappointed me in the various manifestations of scrofula, such as swelling of the glands, impetigo of the face, chronic coryza, etc. Its efficacy has always appeared to me undeniable, especially in certain affections of the respiratory organs, more particularly in chronic bronchitis, in which it has produced the most rapid and lasting amelioration.

"In bronchorrhœa, when there is a considerable secretion, under the influence of which patients soon grow thin, and lose

all appetite, the use of Grimault's Iodized Syrup of Horse-radish, in daily doses of three or four tablespoonfuls, has a most beneficial effect.

"Under the influence of this medicine a favorable modification in the nature of the fluid secreted is soon evident; from being purulent and muco-purulent, as before, it become macous, then decreases in quantity, and if not entirely, especially in the case of elderly persons, it becomes insignificant, and the patient expectorates only a little phlegm on awaking in the morning, the appetite soon returns, and the excessive perspiration ceases.

"The opinion here expressed is in reality the result of very numerous cases in my private practice, which justify me in drawing the following conclusions:

"Whenever cod liver oil is taken with excessive repugnance, or with difficulty borne by the patient's stomach, when, in children especially, it causes diarrhœa, the iodized syrup of horse-radish will be found an advantageous substitute.

"In the treatment of glandular swellings and suppurations the iodized syrup of horse-radish is always more successful than cod liver oil. Only in the case of juvenile patients, we always insisted on their taking twice a day a basin of good broth, eating after each a slice of bread and butter sprinkled with salt."

Account of the Four-Legged Child, J. Myrtle Corban.—We take the following from a proof sheet kindly sent us from the *Richmond and Louisville Medical Journal*:

NASHVILLE, TENN., June 16, 1868. — The undersigned, in response to the request of a number of physicians, and the relatives and friends of the unfortunate subject of this investigation, give the following testimony: The infant, J. Myrtle Corban, has four legs and two distinct external female organs of generation, with two external openings of the double rectum. The external genito-urinary organs are as distinct as if they belonged to two separate human beings. The fæces and urine are passed (most generally simultaneously, particularly the urine) from both

external urinary and intestinal openings, situated respectively between the left and right pairs of legs.

The head and trunk are those of a living, well-developed, healthy, active infant of about five weeks, whilst the lower portion of the body is divided into the members of two distinct individuals, near the junction of the spinal column with the *os sacrum*. As far as our examination could be prosecuted in the living child, we are led to the belief that the lower portion of the spinal column is divided or cleft, and that there are *two pelvic arches supporting the four limbs*, which are situated upon the same plane.

Photographs of this infant have been made by the advice and under the supervision of one of our number.

The reality in this case surpasses expectation, and we are of the opinion that this interesting *living monstrosity* exceeds in its curious manifestation of the powers of nature in abnormal productions, the celebrated "Siamese Twins."

JOSEPH JONES, M. D.,

Prof. of Phys. and Path., University of Nashville.

PAUL F. EVE, M. D.,

Prof. of Surgery, University of Nashville.

The Professors further remark :

Josephine Myrtle is the third offspring of W. H. and Nancy Corban, aged twenty-five and thirty-four, the wife being the senior by nine years. They are so much alike in appearance, having red hair, blue eyes and very fair complexion, as to produce the impression of their being blood kin, which, however, is not the case. Mrs. Corban is from North Alabama, had borne one child to a former husband, the child having dark coloring, and resembling mostly the father, who had black hair and eyes. Her three children are all girls; the one already alluded to, now six years old, another three, and this *infant monstrosity*, now to be more minutely described, born the 14th of May, 1863, in Lincoln county, Tennessee, five weeks ago.

Mr. Corban is a Georgian, served in the Confederate army through the war, and was severely wounded in the right arm

and left hand. The parents are in fair health, though the mother is *anæmic*. She recollects no fright or disturbance during her last pregnancy. The presentation was fortunately the head, which accounts for the preservation of the life of the child. It would be curious to speculate on the trouble which might have been produced had the feet or breach presented, while the result, in all probability, would have proved fatal to the infant, and possibly to the mother. Mrs. Corban says that there was nothing peculiar in the labor or delivery. When three weeks old the child weighed ten pounds. It now nurses healthily, is thriving well, and we saw it urinate simultaneously, between the *two pairs of labia of the two vaginæ*, situated about six inches apart. From the crown of the head to the *umbilicus* the child measures twelve inches, and from this point to the toes of the right and left external feet eleven inches. From the *umbilicus* up all is natural and well formed; all below this extraordinary and unnatural. An inch below the navel is a mark of an apparent failure for a second one. There are four distinct, pretty well developed, lower extremities. They exist in pairs on both sides of the medium line, which resembles the cleft of an ordinary pair of legs; but here there are no marks whatever of *anus* or *genital* organs, and upon pressure we discover no *os coccygis* or *sacrum*. The outer legs of both sides are the most natural of the four (though the foot of the right one is clubbed), but are widely separated by the two supernumerary ones, which are less developed, except at their junction with the body, from which they taper to the feet and toes more diminutive, and which are turned inwards. One toe is bifid on the left extra inward extremity. At birth these extra legs were folded flat upon the abdomen. We are led to believe that there are *two uteri as well as two recti*; in fact, that the pelvic organs are double. Of course a minute dissection would alone expose the true condition of these parts.

Should this infant reach maturity, and the internal generative organs be double, there is nothing to prevent conception on both sides. The first difficulty will, however, be in her walking. The outer, or external, legs may be used for progression; the

inner, or inturned, ones probably never. These might be successfully amputated at the knee, or higher up.

Cases somewhat similar to the above have occurred, and been described. Rokitsansky refers to two completely distinct bodies conjoined at their *ossa sacra* or *coccyges*, as in the well known Hungarian sisters, Helena and Judith, born in 1701, who survived their twenty-second year.

Geoffrey St. Hilaire alludes to cases of a trunk with two heads, some even, Janus-like, having four upper and four lower extremities.

The case, however, recalled most vividly by Josephine Myrtle is that of Rita-Christiana, well known in Europe, and accurately described in this country years ago by Prof. Meigs. In this wonderful instance there were two heads, two necks, four arms, but only two legs; and was thus the reverse of our case. From the *umbilicus* down there was one well formed child, but above this all the organs were double; in reality there existed two beings. The *rectum* and bladder were common to both, but all else in the trunk was double and distinct. One would sleep while the other played, etc., for they had *two spinal marrows*, *two brains*, *two hearts*, but the last two occupied a common *pericardium*. Unfortunately, after surviving a little over a year one sickened and died, when the other, then in health, instantly expired.

The Humboldt Medical College.—We call attention to the announcement of this institution. This is the only medical college in the West that has fully come up to the requirements as proposed by the late convention of medical college professors. They have extended the term, and otherwise changed the course to suit the advanced position of medical teaching. We make the following extract from their circular, which more fully defines their plan :

"In the discharge of the duties assumed, the Faculty was influenced by two objects—first, the real interests of those who availed themselves of the superior advantages of the school; and,

second, the permanent character of the institution itself. These objects were, and will continue to be, esteemed paramount to those of a mere personal nature. The acquisition of dollars and cents, though not ignored, has not been the dominant idea or main purpose of the professors.

"The responsibilities incurred in this undertaking were, and still are, fully appreciated by the founders of the college; but the demand made by the profession at large, as expressed in the numerous societies and journals throughout the country, for a more complete system of medical college instruction, and the hearty indorsement given to the resolutions of the Teachers' Convention assembled in Cincinnati over a year since, give the assurance that this pioneer work must meet the approbation and receive the support of medical men, as they also encourage us to the more energetic and more laborious prosecution of the enterprise.

"The stereotyped and imperfect plan of medical education as followed out by the colleges of this country, required modification in many essential particulars. The four and a half months' term was too brief a period to go thoroughly over the whole field of medicine and surgery; the method pursued of teaching the students simultaneously all the branches, elementary as well as the far advanced, was both irrational and unprofitable, and clinical teaching, under such circumstances, remained almost fruitless.

"The changes for the better which we have introduced are: The time of attendance on lectures has been extended to two regular terms of seven months each, and two summer terms of two months each, making the whole time of college attendance eighteen months (attendance, however, on the summer terms, though greatly desired by the Faculty, not being made obligatory on candidates for graduation). Further, a more systematic arrangement of the course of instruction has been established. Each of the two long terms has been sub-divided into two, of three and a half months each, and all the branches of medical science are taught in four different successive and progressive courses; the students being divided into junior and senior

classes, as will be seen further on. It must be evident that the student, being thus inducted from the simple to the complex, studies to the greatest possible advantage and with the most beneficial results in a given time.

"It will thus be seen that while the Humboldt Medical College offers every inducement to medical students anxious to acquaint themselves with the great principles of their profession, it offers none to those whose highest ambition is to obtain the degree of Doctor of Medicine, regardless of merit; such as these must still resort to such schools as make doctors on shortest time, and with the least expense and exertion on the part of the student."

Medical Department of the University of Michigan.—We are pleased to see that the Regents of this University have at last had the moral courage to reject the base proposition of prostituting this school to the vile purposes of quackery, and we cheerfully publish the following extract from their late circular:

"In consequence of an act of the Legislature of Michigan, at its last session, granting aid to the University on the condition that a Professor of Homeopathy should be introduced into the Medical Department, much agitation and annoyance have been experienced by its friends; but the Faculty are now happy to announce to the medical profession, and all the friends of legitimate medicine, that the Board of Regents, who control the University, at a recent meeting resolved, with but a single dissenting vote, that under no circumstances should such professor be introduced into the Medical College at Ann Arbor; and the Supreme Court of the State having since decided that all previous action of the Board making provision for the establishment of a School of Homeopathy at another place is not a compliance with the law, and such action thus becoming null and void, the Faculty are enabled to assure the profession that the *Medical Department of the University of Michigan* is entirely free from the remotest connection with homeopathy—that its curriculum will not be changed, and that it will remain as heretofore unaffected by any form of irregular teaching or practice."

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

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ST. LOUIS, AUGUST 15, 1868.

No. 12.

A TABULATED REPORT OF CASES OF CHRONIC RHINITIS (NASAL CATARRH), AND ITS TREATMENT, &c.

By T. F. RUMBOLD, M. D.

[Read before the St. Louis Medical Society, June, 1868.]

MR. PRESIDENT—I wish to read before this society a tabulated report of all the cases (except three, which are still under treatment) of Chronic Rhinitis, both simple and ulcerated, that have been under my care from August, 1866, to December, 1867, inclusive; also a few remarks, in as concise a manner as possible, upon the mode of examination and treatment.

In the following cases the nose only was diseased, the adjacent organs being but little, if any, affected. (See table next page.)

Case No. 3 remained well to September 4, 1867; returned September 18, 1867, and received six additional treatments.

The treatment was discontinued in case No. 8 because the patient would not stop the use of tobacco.

In case No. 10, a part of the free margin of the inferior turbinated bone of the left side was necrosed; the mucous membrane of the antrum of highmore on that side was also ulcerated. She discontinued the treatment because of the dread of the operation of removing the dead portion of the bone.

Case No. 11 was the only one that the treatment entirely failed after a fair trial.

Case No. 14 was greatly improved, the dark blue color having

A TABULATED REPORT OF CASES OF CHRONIC RHINITIS (NASAL CATARRH).

Number.	Name.	Age.	Chr. Simple Rhinitis.	Chr. Ulcerative Rhinitis.	Cause.	Length of time affected: Yrs.	Commenced Treatment.	Number of Treatments.	Date of Discharge.	Cured.	Improved.	No Benefit.	Remarks.
1	Mrs. E. S.	27		1	Colds.	10	Aug. 16, '86	43	Nov. 2, '86	1			Last time heard from, November, 1887.
2	Mrs. M. E. S.	23	1	1	"	3	Dec. 1, '86	32	Feb. 14, '87	1			Last time heard from, January, 1888.
3	Mrs. H. W. C.	26	1		"	7	Dec. 1, '86	36	Mar. 13, '87	1			Last time heard from, March, 1888.
4	Col. W. F.	26		1	"	10	Jan. 24, '87	34	June 28, '87	1			Last time heard from, June, 1888.
5	Mrs. A.	27		1	"	13	March 6, '87	33	June 28, '87	1			Last time heard from, June, 1888.
6	Nettie T.	25		1	Scarlet Fever	8	March 8, '87	33	June 29, '87	1			Last time heard from, June, 1888.
7	Mr. J. R. N.	26			Colds.	2	April 4, '87	23	May 31, '87	1			Last time heard from, August, 1887.
8	Mr. L. G.	26	1		"	2	April 6, '87	23	April 16, '87	1			Last time heard from, August, 1887.
9	Mr. Alfred S.	21	1		"	12	April 19, '87	23	June 21, '87	1			Last time heard from, August, 1887.
10	Miss J. G.	28	1	1	"	22	June 17, '87	32	Sept. 30, '87	1		1	Last time heard from, January, 1888.
11	Mr. P. K.	43	1		"	18	July 5, '87	32	Oct. 4, '87	1			Have not heard from him since.
12	Mr. J. W. S.	22	1		"	8	Aug. 10, '87	41	Dec. 24, '87	1			Last time heard from, March, 1888.
13	Mr. W. O. P.	37	1	1	Scarlet Fever	9	Sept. 14, '87	28	Feb. 21, '88	1			Have not heard from her since.
14	Th. P. W.	33			Colds.	10	Oct. 19, '87	26	Feb. 23, '88	1			Last time heard from, June 1888.
15	Mrs. W. L.	29	1	1	"	14	Nov. 5, '87	32	Dec. 19, '87	1			Last time heard from, June, 1888.
16	Mrs. J. T. C.	29			"	8	Dec. 1, '87	32	Feb. 19, '88	1			Last time heard from, May, 1888.
17	Mr. J. T. C.	28	1		"	20	Dec. 1, '87	23	Feb. 27, '88	1			Have not heard from him since.
18	Mrs. E. C.	42		1	"	12	Dec. 10, '86	23	Feb. 27, '88	1			
19	Miss M. H.	28		1	"	12	Dec. 21, '87	31	Mar. 28, '88	1			
20	Mr. A. H. L.	21			"								
21	Mr. McE.	21			"								
			11	10						16	4	1	

disappeared. The patient and all of the relatives were of a scrofulous diathesis.

Case No. 17 discontinued the treatment by the advice of his family physician, who promised to complete the cure with the nasal douche.

The rhinoscope is the only instrument by which the naso-pharyngeal cavity can be thoroughly inspected. It is useless to expect to make a sufficient examination through the anterior nares. Very frequently the mucous membrane in this region is unaffected, while just back, out of sight, there may be extensive inflammation or ulceration. Not only is this instrument necessary in this examination, but is as essential in the treatment. It is very doubtful that cases of ulcerative rhinitis could be cured without its aid in guiding the brush to the place of ulceration.

In the examination of the above cases of simple rhinitis, the reflection from the rhinal mirror represented the condition of the mucous membrane on the septum, in the posterior nares, and on the turbinated processes, more or less congested, thickened, and dark red in color. In those cases in which the hearing was a little affected, the buccal orifices of the eustachian tubes were also dark red, and, when thickened, blue red. If the thickening of the mucous membrane was general, there was always more or less collection of muco-purulent secretions under the turbinated processes, in the mouths of the eustachian tubes, and where the mucous membranes come in contact. In the cases of ulcerative rhinitis, the color was always blue red. The first place at which the ulcerative process was observed to occur, was under the collections of the muco-purulent secretions, extending to the surrounding tissues as the disease advanced.

The local treatment consisted in washing the mucous membrane clean of all the muco-purulent collections. This was best accomplished by throwing the solutions of common salt, 3j to 3iij, or chlorate of potassa 3j to 3v, or permanganate of potassa ʒj to ʒij, or chloride of zinc grs. xv to grs. xxx, to the pint of warm water, up behind the soft palate, into the naso-pharyngeal cavity with a syringe made for this purpose. This washing was

continued as long as the secretions were so excessive as to form collections in or about the nasal fossa. It was always necessary, in the early part of the treatment, to complete the cleaning process with the aid of the brush or sponge, guided by the rhinal mirror. After the surface was thus freed from all the secretions, steam from warm water was gently forced into the nostrils for twenty or thirty minutes, having a sufficient amount of amm. carb. in it to cause by its irritation a free flow of mucus. Then the mucous membrane was covered by nebulizing the solution of iod. grs. j, pot. iod. ℥j, glycerine ʒj. In the cases of ulcerative rhinitis the comp. tinc. of iodine was applied to the ulceration with a brush, guided by the rhinoscope, previous to the nebulization.

This constituted one local treatment, occupying from three-fourths of an hour to one and one-half hours at each sitting, which was repeated three times per week. It was so gently accomplished that the patients did not complain, but, on the contrary, expressed a consciousness of relief, experiencing a coolness and openness of the nostrils.

The constitutional treatment was such as agreed with general principles. Tonics and chalybeates were in a large majority of the prescriptions.

The patients were impressed with the importance of making their cases a specialty, using the utmost care to avoid all exciting or predisposing causes, informing them of the great liability of the disease to return, even after they have remained well for months.

The following injunctions were explicitly and positively enjoined :

1. Do not remain where a current of cold air can strike but a limited part of the body, especially that of the head.
2. Be exposed as short a period of time as possible to the night air; and when compelled to be out at this time, wrap additional clothing around the neck and chest, and keep the mouth closed.

3. Do not go to any place of congregation, where there is an impure atmosphere of a high temperature, while the feet are cold and damp with perspiration.

4. Never allow the feet to be cold.

5. Always breathe through the nostrils, day and night.

6. Wear flannel next the body, thick in cold and thin in warm weather.

7. Do not use tobacco.

8. Do not remain in a room where tobacco is being smoked.

9. Do not use spirituous drinks, unless prescribed by a physician.

10. Sleep from 9½ o'clock P. M. to about 6½ o'clock A. M.

The patients had the encouragement that the longer they keep off a relapse, the less tendency there is for a return; and if an attack should take place, it would be of shorter duration. But this encouragement was not to be construed into a license for abolishing any of the above rules.

A CASE OF NASAL POLYPUS TREATED WITH TINCTURE FERRI CHLORIDI.

By G. TROUPE MAXWELL, M. D., Fernandina, Florida.

January 8, 1868, Mrs. McL. was brought to my house by her husband, from their home, some twenty miles in the country, for relief from a very large nasal polypus. Her general appearance was unhealthy, and her countenance wore an anxious, haggard expression. The posterior nares were closed completely, which compelled her to respire through the mouth altogether. Her voice had the nasal twang, which is incorrectly described as "talking through the nose," and she complained of pain in the nose, and an intolerable annoyance from the presence of something in the throat, which threatened suffocation, especially when in the recumbent posture. This last sensation prevented her sleeping sufficiently, from which privation she experienced great distress and depression of spirits. Upon inquiry into her history I learned that she had been the subject of nasal polypi for many years, and not very long before had

visited Augusta, Ga., and had several extracted from the posterior nares by that distinguished surgeon, Prof. Paul F. Eve.

An examination revealed a large, pear-shaped, wrinkled tumor behind the uvula, hanging into the throat, which was attached by a pedicle to the inferior spongy bone of the left nostril. Reducing the officinal tinct. mur. ferri one-half by the addition of water, with an ordinary small glass penis syringe I injected about 3ij into the nostrils, holding her face up so as to prevent the fluid from escaping too quickly from the external opening; the tumor closed the passage and prevented the escape into the throat. The application caused very little pain or irritation in the nasal cavity. She complained more of the sympathetic irritation of the eyes, which produced an excessive flow of tears. She was put in a darkened room, where she lay upon a bed and slept an hour or two. Upon awaking she expressed great relief from all her sufferings and annoyances. The tumor had shriveled decidedly, and, consequently, the pain, inconvenience, &c., were materially diminished. Her intention in coming was to remain several days or a week in Fernandina, but she felt so much improved that she returned to her house that evening, notwithstanding the necessity of exposure at night to accomplish the trip.

I directed her husband to repeat the operation twice daily until the mass sloughed off, and then to reduce the tincture to one-fourth or less, and to make occasional applications *pro re nata*. In a few days I received a message that "the whole thing, roots and all, had come away." Her relief was complete; health improving and spirits fine. From time to time since I have seen her husband and received satisfactory reports of his wife's condition. Nor will the growths ever be permitted to return, or to reach a size that will cause trouble, for an occasional application of the tincture will destroy any recurrent polypus. In that, the muriate tincture of iron possesses advantage over any thing I am acquainted with; it destroys the polypus so effectually that an occasional application insures against recurrent growths. Professor Eve had given this lady

a powder for that purpose to be occasionally snuffed into the nostril, but it failed of its object.

In conclusion, let me disavow any intention to claim originality in, or novelty for, this treatment. In the "Monthly Summary" of the *American Medical Monthly*, November, 1859, a notice of this "new treatment of nasal polypus" is made; the original article, "a report of two cases of nasal polypus cured with injections of muriated tincture of iron slightly reduced," by G. H. Reeder, M. D., of Lacon, Illinois, having appeared in the September number of the *Chicago Medical Journal*. Soon after I read the account in the "Monthly Summary" a case presented itself for treatment, and I employed the tincture with the same result described in Mrs. McL.'s case. Altogether I have used the muriated tincture ferri in three cases, all successful, and I feel justified, therefore, in recommending this treatment as a substitute for both the forceps and the ligature.

ORTHOPÆDIC APPARATUS AND DESCRIPTION OF THE
MECHANICAL APPLIANCES EMPLOYED IN THE TREAT-
MENT OF DEFORMITIES AND DEFICIENCIES OF THE BODY.
WITH DIRECTIONS FOR TAKING MEASUREMENTS FOR
THEIR APPLICATION.

By D. W. KOLBE, Philadelphia, Manufacturer of Surgical Instruments and Mechanist
to the Philadelphia Orthopædic Hospital.

Having been frequently consulted by physicians and others living at a distance, as to the mode of taking measurements for the construction of mechanical contrivances for the treatment of deformities and deficiencies of the body, I have been induced, at the request of Dr. O. F. Potter, editor of the *MEDICAL REPORTER*, to prepare this paper, the greater part of which is taken from a pamphlet published by me some time ago. The present article will, however, contain accurate directions in these particulars, so that no blunders can possibly occur if the directions are properly followed.

It is of frequent occurrence that physicians in the country are applied to for the treatment of various deformities, and were they aware of the facility with which they could be treated they would cheerfully undertake their cure, instead of sending them

to the various cities ; and it is for the purpose of placing prominently before the profession the appliances for these purposes that the present paper, with the elaborate illustrations, is published. The figures are so perfectly represented, and the mode of applying the instrument so thoroughly and plainly given, that I feel confident that any one can successfully treat any of the deformities set forth without the possibility of failure.

The forms of instruments described are of the most approved kinds, embracing the most recent advances and discoveries in mechanical therapeutics, as described in the latest and most elaborate works on this subject. They are approved of by the large mass of practicing surgeons, as shown in Prof. Gross' System of Surgery, and Dr. Wales' Mechanical Therapeutics, in which works fuller accounts of these apparatus may be found.

I trust, also, that in any instance where the details herein given are not fully understood, that persons will apply to me by letter, when any additional information will be most cheerfully given. In peculiar cases, by sending a description, appliances can be made specially adapted to them.

I am also prepared to furnish, besides the above described apparatus, any form of surgical appliances or modification of apparatus that may be ordered by the surgeon.

APPARATUS FOR DEFORMITIES OF THE HEAD AND NECK.—WRY NECK.

Figures 1 and 2 show my apparatus for wry neck, and Fig. 3 an apparatus for the same purpose, modified and improved.

Fig. 1.



Kolbe's apparatus for wry neck.

Fig. 2.



Showing the mode of application of the apparatus.

Fig. 3.



Showing the application of the apparatus modified by Kolbe.

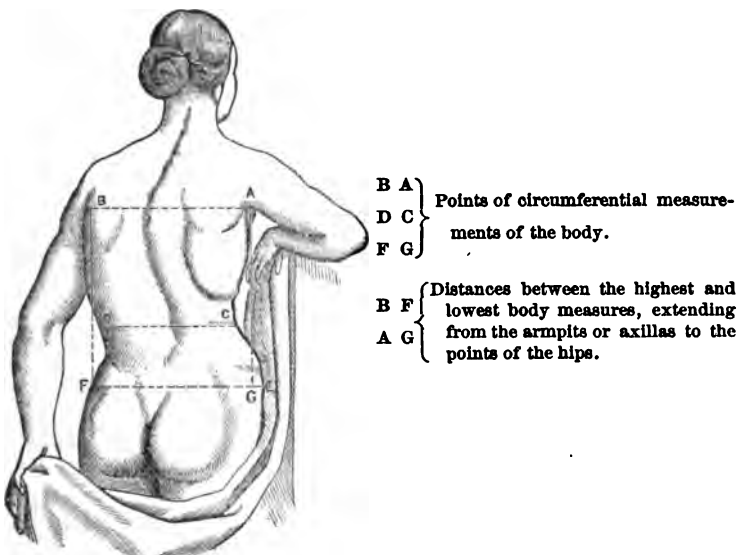
Both of the above forms of apparatus for wry-neck take their bearings or point of counter-extension upon the pelvis, instead of the shoulders, as in the ordinary collar apparatus, and they are, therefore, stable, without the slightest tendency to become displaced. The rotative force applied to the head by the two cephalic levers admits of graduation by means of ratchet centres, as seen in the cuts.

In ordering an apparatus of the sort, the measurements given in Fig. 7, will be required. A sketch or photograph showing the extent of contraction will be desirable, and assist greatly in making a well-fitting apparatus.

APPARATUS FOR DEFORMITIES OF THE TRUNK—CURVATURES OF THE SPINE—APPARATUS FOR LATERAL CURVATURE OF THE SPINE.

Fig. 4 shows the manner in which the necessary measurements are to be made in ordering an apparatus for spinal deformity.

Fig. 4.



In addition to the above measurements, please state to which side the body inclines (right or left); the age and sex of the patient. In ordering a spinal supporter, as there are a number in general use, it will be necessary to name the special one required; and should any modifications be desired, they should also be stated.

Fig. 5 represents my apparatus for lateral curvature. It consists of a steel frame well padded with leather or other appropriate material. The power is applied by means of screws and ratchet centres, as shown above.

Fig. 5.



Fig. 6.



Fig. 6 illustrates the construction of another form of my apparatus, particularly adapted to females. It consists of a steel frame, padded as in the former case. The power is applied by means of free centres and elastic straps.

APPARATUS FOR ANTERO-POSTERIOR OR ANGULAR CURVATURE (POTT'S DISEASE).

Fig. 7 is given as a guide taking the measurements in ordering an instrument for angular curvature.

GUIDE FOR MEASUREMENTS.

G H } Circumferential measures of hips.
F E }

B to A—Breadth of the shoulders.

C to D—Length from centre of curvature to horizontal line.

B F } Distances between the two horizontal lines.
A E }

In all cases of this deformity, it will be necessary to send an outline of the dorsal protuberance, which may be obtained readily by placing the patient in a horizontal position on his face, and then applying a strip of sheet-lead, lead-wire, or paste-board cut edgewise, along the median line over the apex of curvature, and extending between the horizontal lines B A and F E. This will give a curved outline, which may then be marked off on a sheet of paper. The age and sex of the patient will also be required.

Fig. 8 represents an apparatus, modified by myself, for antero-posterior or angular curvature. It consists of a light padded steel frame. The bearings or point of support is established on the hips by means of two lateral crutch-shaped supports, running on either side of the spine, from the pelvic belt to the axillas.

Fig. 7.

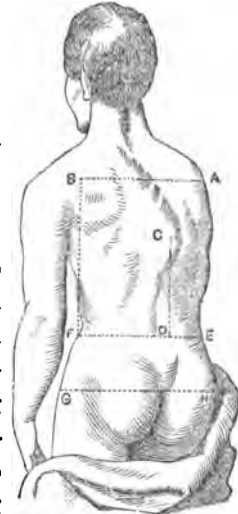


Fig. 8.



Fig. 9.

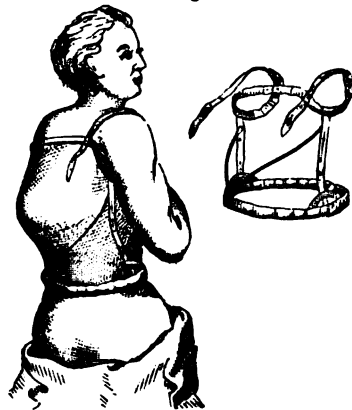


Fig. 9 shows the old form of a spinal supporter. It consists also of a light steel frame well padded, which takes its support on the pelvis, and supports the upper part of the body by axillary crutches.

APPARATUS FOR CERVICAL CURVATURE.

Fig. 10 shows my modification of an apparatus for cervical curvature, and Fig. 11 illustrates the mode in which it is applied.

Fig. 10.



Fig. 11.



In ordering the above apparatus the person will be guided by the same measurements as are given in Fig. 7, with the addition of the distance from the line B A to the top of the head.

This instrument may also be employed in slight cases of wry neck. It is similar in construction to the apparatus employed for the treatment of angular curvature in the dorsal region; the cephalic lever is movable, and in slight cases of distortion it may be detached from the body of the apparatus during the time the patient walks abroad.

APPARATUS FOR DEFORMITIES OF THE UPPER EXTREMITIES— FRACTURES—APPARATUS FOR FRACTURE OF THE CLAVICLE.

The apparatus represented in Figs. 12 and 13 (front and back views) is that devised by Dr. Boissonot. It consists of a leather forearm tray, A, lacing and made to fit the parts well. To the upper and outer part of this tray a stout piece of leather is

Fig. 12.



Front view.

Fig. 13.



Back view.

attached, freely movable; this part is again extended by the addition of two yards of stout webbing, C C, which, after coursing around the chest in the manner shown in the cut, is finally attached to the tray by the buckle D, thence to sound shoulder for sling.

In ordering this apparatus no measurements are required, but simply the age and sex of the patient.

Figs. 14 and 15 show the apparatus of Dr. Levis. "It consists of a short, firm pad in the axilla, by which the shoulder is held

Fig. 14.

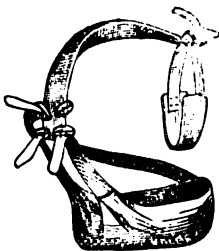


Fig. 15.



from the side, and over which, as a fulcrum, the elbow is drawn to the side. To the front and back of the axillary pad are fastened straps, which pass directly upwards, and are buckled to a wide main supporting band, which passes from the shoulder

across the upper part of the back, and over the shoulder of the sound side, and terminates on the front of the chest. To the front end of the wide supporting band is suspended a sling, by which the elbow is supported. On the back of the sling, at a short distance above the point of the elbow a strap is attached, which passes obliquely across the back, and, coming in front, is buckled to the main supporting band. The extra buckle, which will be noticed at the front end of the wide band, comes into use when the apparatus is reversed for the opposite shoulder."

Figs. 16 and 17 illustrate the apparatus for fracture of the clavicle as designed by Dr. Edward Hartshorne. This differs

Fig. 16.



Front view.

Fig. 17.



Back view.

from the preceding in having a compress placed upon the lower and inner margin of the scapula of the injured side.

In ordering this apparatus no measurement is required. State the age and sex of the patient.

APPARATUS FOR RESECTIONS AND ANCHYLOSIS.

Fig. 18 shows my apparatus for resections at the shoulder-joint and in the continuity of the humerus. In ordering this apparatus, mark the seat of the resection; give the circumference of the shoulder, and of the chest just under the armpits; the distance from the armpit to the elbow, as well as a statement whether it be the right or left arm for which the apparatus is intended.

Fig. 19 shows my apparatus for resection of the forearm. It will be necessary, in ordering this apparatus, to give the circum-

Fig. 18.

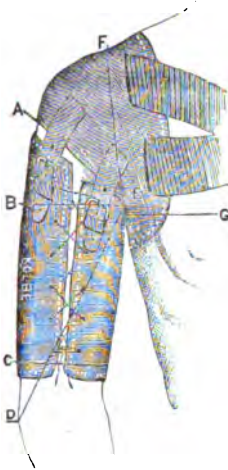
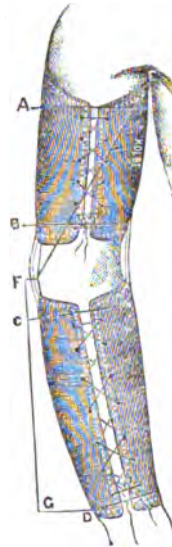


Fig. 19.



ference of the arm at the armpit, above the elbow, below the elbow, and at the wrist. State also the length from the wrist to the elbow-joint, from the elbow-joint to the armpit, and whether it is the right or left arm.

Fig. 20 shows my modification of one of Stromeyer's splints for ankylosis of the elbow. Other forms of the apparatus are made, in which the regulating screw is so placed as not to materially interfere with the patient's clothing. In measuring for this apperatus, give the circumference of the arm above and

Fig. 20.

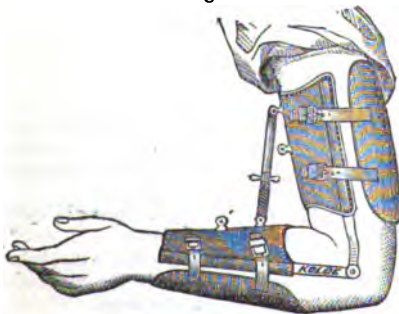


Fig. 21.



below the elbow, and also the length from the wrist to the elbow, and from the elbow to the armpit.

Fig. 21 shows the application of shoulder-braces. It will be simply necessary, in ordering these, to mention the age and sex of the patient.

KOLBE'S ARTIFICIAL ARM—DIRECTIONS FOR MEASURING PATIENTS FOR ARTIFICIAL ARM.

Fig. 22 will be used in cases where the amputation is above the elbow or at shoulder-joint.

Fig. 22.

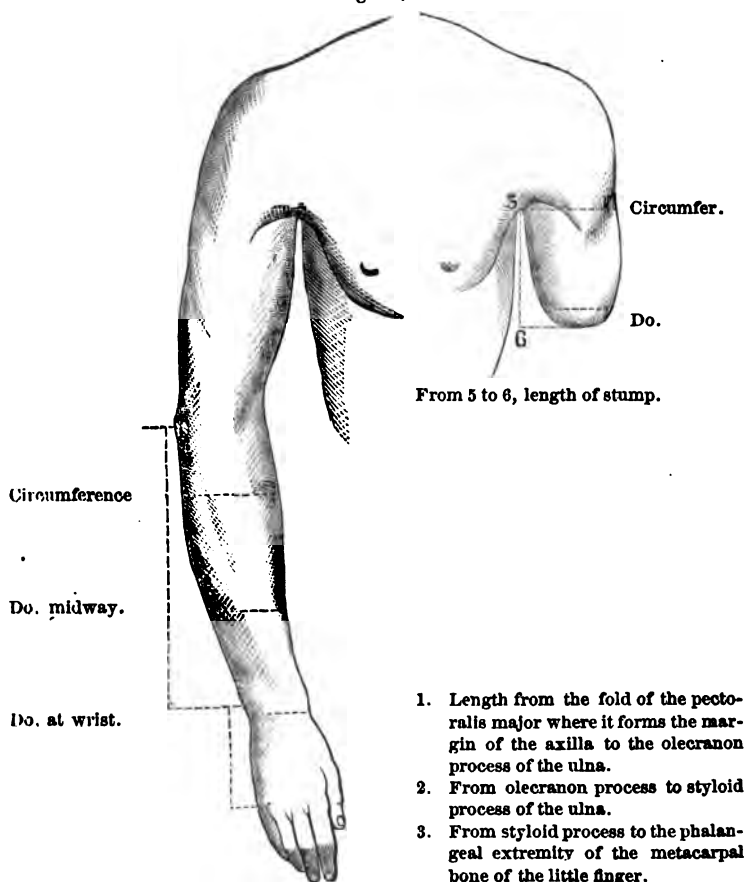
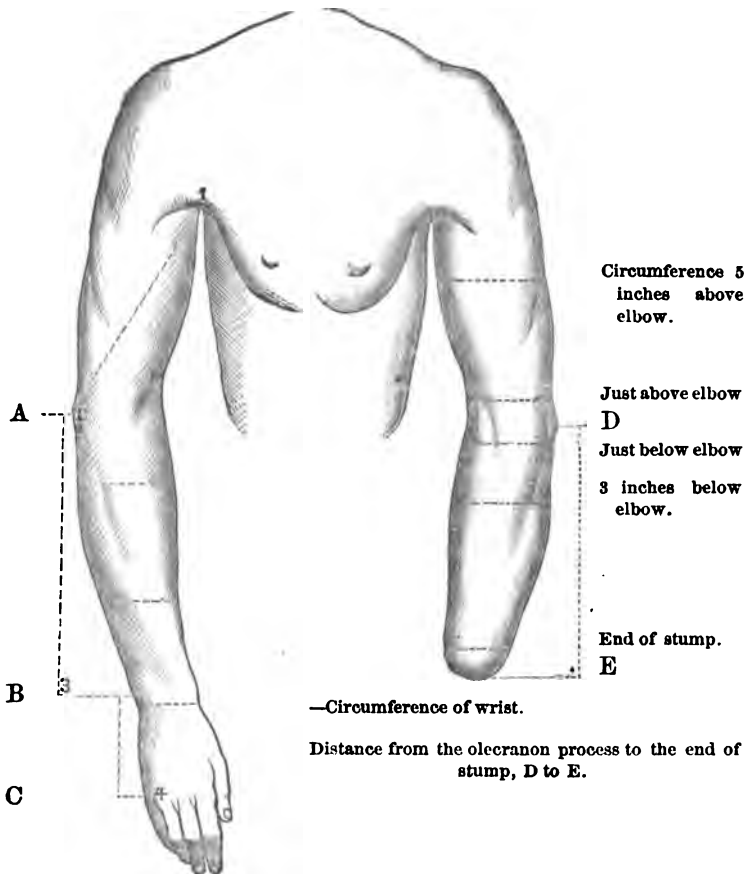


Fig. 23 will be used in cases where the amputation is below the elbow.

Fig. 23.



Length from the olecranon process of the ulna to the styloid process of the ulna.

From styloid process to the phalangeal extremity of the metacarpal of the little finger.

The limbs, as represented in the figures, are in the proper positions for measuring.

In measuring the circumference of the stump, the tape should be drawn only moderately tight.

The perpendicular lines indicate the distance to be measured,

in order to get the length of the limb as well as the length of the stump.

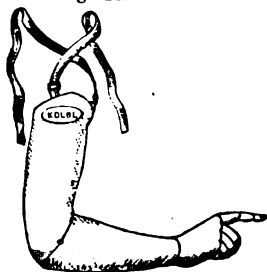
The cross lines in the figure indicate where the circumferences are to be taken, and the figures are to be marked plainly on the lines. The breadth across the shoulders, measuring on the back, must also be given, and in measuring from 1 to 2 the tape should be drawn on the inner side of the arm.

State which limb is amputated, and whether the hand be large, medium or small size.

After taking the measure, in amputation below the elbow, the arm should be laid on a sheet of paper (back down), and with a pencil, held perpendicularly, mark round it so as to give a correct profile of the shape of the stump and arm for a distance of five inches above the elbow.

The following drawings are intended to illustrate the outward form and mechanism of motion of my artificial arm. It can be

Fig. 24.



adapted to limbs of any length of stump, is highly finished externally, and possessed of natural and lifelike motions.

Fig. 24 shows the arm complete for an amputation above the elbow or at the shoulder-joint. It performs the various functions of the upper extremity, as flexion, extension of the elbow, moving the fingers, grasping, carrying food to the mouth, &c., with pleasing ease and gracefulness.

Figs. 25 and 26 represent an arm for amputation below the elbow; its motions are the same as in the previous case. This arm is of great service to the laboring man, as I have so modi-

Fig. 25.



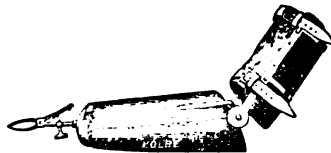
Fig. 26.



fied the connection of the hand with the forearm that the former may be removed at pleasure, and various useful contrivances substituted, such as a chisel, screwdriver, knife, fork or spoon.

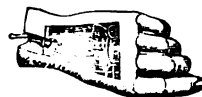
Fig. 27 shows the hand replaced by a pair of nippers.

Fig. 27.



The application of power is provided for in the construction of these limbs by the following mechanism: A traction-cord, consisting partly of webbing and partly of a well-tempered slip of steel, is attached above by the webbing to the shoulder of the arm opposite that which the artificial substitute is intended to replace, and below hooks on by the end of the metallic portion of the cord which runs about the forearm, to a short vertical steel slip running through a slit in the back of the margin of the wrist-plate, thus connecting it with the mechanical arrangements designed to move the fingers, which we shall shortly describe. The strip of steel at the level of and upon the outer side of the elbow is articulated with the aid of a metal slide working for its whole length upon a tenon or projecting pin, the upper end of the slide is connected to the webbing or leather strap going to the shoulder; the object of this arrangement is to change the direction of the force when the arm is bent. The mechanical arrangement for moving the fingers is inclosed in a cavity hollowed in the substance of the hand; it consists of a number of levers of different kinds, arranged in such a manner as to apply the force exercised by the traction-cord to the best mechanical advantage in moving the fingers. They are placed in the following position: A lever of the second order is placed at the upper part of the hand, and connected with a second lever of the first order placed in the centre of the hand, the fulcrum being a pin running transversely through the hand.

Fig. 28.



The short arm of this lever is bifurcated, each division pressing upon a transverse bar connecting the ends of a short pin projecting from the base of two adjacent fingers. From the end of the long arm of the second lever a bar projects upwards to the extent of an inch and a half, and connected by a short coupling, by its proximate end, to an oblique bar fixed to the base of the thumb. A spiral string runs along each side of the hand, and, acting upon each couple of fingers, keeps them in a position of approximation to the thumb. The fingers are connected with the hand by a transverse bolt; the index and middle fingers, and the ring and little fingers, are coupled together, the former possessing the first phalangeal joints, while the latter are solid. As the mechanism thus far described provides only for the extension of the first phalanges, an additional lever, working by an excentric, is placed in the first phalanges, and acts upon the second and third phalanges.

ABDOMINAL SUPPORTER AND TRUSSES.

Fig. 29.



Fig. 29 illustrates the application of an elastic abdominal supporter in pregnancy and large tumors of this region. In ordering this bandage, simply give the circumference of the abdomen in the directions of the lines A B, A C, and A D.

Fig. 30 shows the ordinary truss. In taking measurement for such an instrument give the circumference of the body at the point where the hernia protrudes—that is, on a level with the inguinal, crural, ventral or umbilical apertures; and also mention if the hernia is on the right or left side, or both.

Fig. 30.

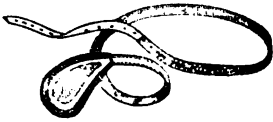


Fig. 31.

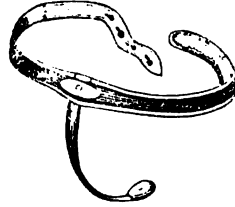


Fig. 31 shows a spring truss or prolapsus ani, for falling of the body. In ordering the instrument, give the circumference of the body above the hips, and the distance from the front central point of this line, over the perineum, to the centre of the back part of the line.

REMOVAL OF TWO TUMORS FROM THE BACK OF THE LOWER TURBINATED BONES—ILLUSTRATING THE USE OF THE LARYNGOSCOPE AND RHINOSCOPE IN DIAGNOSIS.

By JOHN WILKINS, F. R. C. S.

In February I was consulted by a gentleman who had suffered for six months from a "stuffiness" in the nostrils, pain on swallowing, and general uneasiness in the region of the Pomum Adami.

It had steadily increased from the middle of last year, and the remedies administered seemed to have no effect in lessening his discomfort. There was no abnormal appearance visible to the naked eye, on examination of the palate and pharynx in the ordinary way through the open mouth, nor was there anything wrong, as shown by the laryngoscope, on the epiglottis or mucous membrane down the windpipe, the rings of which could be easily counted to eight or nine; nor in the larynx, the apparent seat of pain. Every part, from the soft palate downwards, was perfectly normal. His throat was favorable for using the rhinoscope, having a small uvula and a moderately wide space between the soft palate and the posterior wall of the pharynx, so that the mirror could be introduced without causing much irritation to these parts. Examination by the rhinoscope,

which was well borne by the patient, showed considerable thickening of the mucous membrane of the posterior surface of the soft palate, the superior parts of the pharynx and the posterior openings of the nasal fossæ, extending itself over the turbinated bones. The openings of the nasal fossæ were considerably lessened by the swollen condition of the mucous lining, which was covered by a thick creamy muco purulent substance. On clearing this discharge away by the application, on a brush, of a strong solution of Tannic Acid, dissolved in Glycerine, a large ulcer, about the size of a sixpence, was brought into view, situated high up on the posterior wall of the pharynx, in appearance as if a portion of the mucous membrane had been scooped out, as it extended completely through it. The mucous membrane on the back palate, nasal fossæ, and turbinated bones was covered with spongy and granular ulcerations, and so swollen that the outlines only of the parts could be clearly seen. Examination of the nostrils in front discovered extensive disease. The cartilage of the septum had been nearly destroyed to the vomer and perpendicular plate of the ethmoid bones. My examination of this part was greatly facilitated by the reflected light, which showed the destruction had not extended itself beyond the limits of the cartilage of the septum; the nasal bones, though sunken from the absence of the cartilage, were free from disease, as were the vomer and ethmoid bones.

The mucous membrane lining the nasal fossæ was much swollen, but not ulcerated beyond the parts in close contiguity to the diseased cartilage. The straightforwardness of this patient in his replies to searching questions left little doubt in my mind as to the nature and cause of the mischief. He was put therefore on an anti-syphilitic treatment, consisting principally of the Bichloride and Biniodide of Mercury with the Iodide of Potassium. The deep excavated ulcer was frequently touched with a solution of Arg. Nit. 3 ij ad 3 i; and the follicular and granular ulcerations were swabbed three or four times a week with a weaker solution, gr. lxxx ad 3 i; alternated occasionally with the compound Tincture of Iodine. The result was a considerable improvement in the appearance of the parts. In a month

the scooped-out ulcer had completely healed, and the mucous membrane generally over the pharynx and nasal fossæ had assumed its normal rose-pink color. The margins of the cartilage of the septum near the nasal, ethmoid and vomer bones showing still an indisposition to assume a healthy appearance, were touched thoroughly with a strong solution of Nitric Acid which, on throwing off a slough, left the parts clear and free from further disease. During the treatment of this case, and after the ulcerated and swollen condition of the mucous membrane had been restored to a more healthy state, the posterior nasal fossæ were seen to be partially obstructed by a tumor in each cavity about the size and form of a filbert, apparently of a spongy nature and very vascular. It filled the floor of each nostril, pressed against the septum narium, and hid from view the posterior part of each of the inferior turbinated bones. On introducing the eustachian catheter through the nose, I could raise the growths, and by reflected light I plainly saw the attachment of each by a pedicle, proceeding from the posterior margins of the lower turbinated bones. Dr. Neild saw the case with me one evening, and in a very short time we succeeded in removing the growth from the right nostril. This was easily effected by passing a male catheter through the anterior opening of the nostril, containing a loop of strong silver wire. On reaching the tumor the loop was pushed out, and after a little manœuvring, we succeeded in getting it over and round it. Immediately the ends were drawn upon it, and the pedicle was securely and tightly grasped in the noose. Steady and firm traction upon the ends, coupled with a twisting motion, caused the tumor to come away. It was of a spongy, granular nature, and highly vascular. The hæmorrhage was nothing of consequence, and the patient experienced very little pain during the operation. On a rhinoscopic examination, the whole of the lower turbinated bone was now plainly visible, and the spot from whence the tumor had been torn.

Eight days afterwards we removed the other tumor from the left nostril. It was about the same size as the one removed on the right side, and was fixed also to a corresponding spot on the

margin of the lower turbinated bone. No better plan than the noose formed by the silver wire having been devised, I, with Dr. Neild, proceeded to remove it after the manner of the other, and succeeded, with very little difficulty, in bringing it away, root and branch, to the great satisfaction of the patient, who at once felt that the obstruction had gone. This tumor was in character similar to the other. The seat of the growths was touched by a few applications of a strong solution of the Nitrate of Silver, which rapidly healed it, and the patient is now quite well.

The value of rhinoscopy in the above case can scarcely be questioned, as it is certain that no other mode of examination could have determined the nature, position, and extent of the disease with the same certainty, showing the amount of structural change, and with this aid, a correct diagnosis suggested a more appropriate treatment than would otherwise have been applied.

Czermak, in his work, gives an excellent illustration of the value of rhinoscopy in correcting an erroneous diagnosis. A young man, deaf on the left side, was found to have a tumor at the back of the nostril, which conveyed to the finger the impression of a polypus. An operation was contemplated, but a rhinoscopic examination discovered a tapering swelling of the mucous membrane, nearly as thick as the finger, surrounding the orifice of the left eustachian tube; also great swelling of the middle and inferior turbinated bones, but no polypus nor any tumor which an operation could have removed or lessened.

The following is also a typical example of the worth of the rhinoscope, as an aid in diagnosing disease in certain parts of the body: A lady, aged 33, from the country, consulted me, stating that she had suffered for upwards of six years from a most disagreeable sensation in the throat, pressing her fingers upon the prominent part of the front of the throat as the seat of her troubles. About every six or seven days a cheesy substance mixed with muco-purulent matter came through the fauces, accompanied with a most offensive smell. She was otherwise in excellent health, but this unpleasantness continuing so long had

begun to make her nervous and uncomfortable. She had consulted several medical men, who had made many surmises as to what the complaint was; the last she consulted, about two years ago, told her she was suffering from chronic dyspepsia, that her food did not properly digest, but that portions of it coagulated in the stomach, which it expelled now and then through the mouth. As anti-dyspeptic treatment did no good, no relief was obtained from gargles, nor any remedies which had been prescribed. In September last she consulted me, and from her account I gathered that she was suffering from some lesion low down in the fauces or in the upper part of the windpipe. Laryngoscopy and rhinoscopy put conjecture out of the question. The former showed the back parts of the fauces, lower parts of the pharynx, the upper part of the larynx, and down the trachea to be totally free from any disease. All these parts were perfectly normal in dimensions and color. Rhinoscopy, however, brought into view, in the upper part of the back wall of the pharynx, a granular ulcer, deep immediately in its centre, but shallowed off, making altogether a sore about the size of a French bean. The mucous membrane was thickened all round the upper part of the pharynx, and a few other small granular ulcers were visible, scattered about. The surface at the time of the examination was covered with the kind of secretion she had described. I had no doubt, therefore, that this was the situation of the cheesy formation which had annoyed her so many years. Notwithstanding the length of time which had elapsed since the commencement of the malady, I was enabled to give a favorable prognosis, because there was no evidence of disease in any other part of the body. Local applications were commenced on the same day and repeated several times a week. Iodide of Potassium was prescribed, combined with Chlorate of Potash. Under the continued use both of the topical applications and the latter mixture, this patient progressed most favorably, and in a few weeks the discharge ceased, the ulcer having healed.

The result of the preceding case was to me most interesting, from the length of time she had ineffectually complained of the

local mischief, which had begun to excite the gravest apprehensions as to the real nature of the malady. The important aid afforded by the laryngoscope is here apparent, inasmuch as it enabled me to say positively that in the locality where she experienced the pain the parts were quite healthy and natural, merely sympathetic of disease higher up, and the practical value of the rhinoscope is here unquestionable, as it pointed out clearly the seat of the disease, and enabled me to apply the remedies with accuracy to the diseased structure—*Australian Medical Journal*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

MICRO-CHEMISTRY OF POISONS, including their Physiological, Pathological and Legal relations, adapted to the use of the Medical Jurist, Physician and general Chemist. By THEO. S. WORMLEY, M. D., Professor of Chemistry in Starling Medical College, and of Natural Science in Capital University, Columbus, Ohio. With seventy-eight illustrations on steel. Bailliere Bros., New York; H. Bailliere, Regent street, London; J. B. Bailliere et Fils, Paris. Royal octavo, pp. 900. 1887. Price, \$10. For sale by the St. Louis News Company.

The above work is the very best ever issued on the subject, and the author has placed both the medical and legal professions, as well as the community at large, under weighty obligations by this new contribution to the science of Forensic Medicine. We are gratified to note that already have his labors in this department of science rendered his name familiar to distinguished European co-laborers, who have hastened to give him credit, both in their leading journals and standard works, for his valuable discoveries and successful efforts in his important specialty. The study of the chemistry of poisons; their influence in all its bearings upon the human system; their treatment, symptoms, and above all, their detection when fatal, has been a life-time labor of love with the author.

We have before us, in one of the most beautifully printed and bound volumes we have ever seen, the result of a series of experiments and researches extending over a period of more than ten years.

The volume, without the plates, contains 676 pages, octavo size, the first 414 of which are devoted to inorganic, and the re-

maining 262 to organic poisons. The introduction, occupying 60 pages, is a most elaborate and carefully written article, setting forth the object of the work and discussing many points of deep interest, among which are the following: Application of the microscope; import of the term poison; modifying circumstances; classification of poisons; evidence from the symptoms; from post mortem appearances; from chemical analysis, &c., &c.

In the discussion of these various heads, we find many new and profitable suggestions, which give a fore-taste of the value and solidity of the book. We may notice one, Professor Wormley's definition of the word poison. To construct an exhaustive definition has always been a desideratum of no small importance. This is especially so in Forensic medicine, for not unfrequently has an indictment failed to be sustained, because the substance was not a poison according to the standard authors on the subject. Take for instance Dr. Taylor's definition, one of the leading toxicologists of England, and one whose authority ranks among the highest in medico-legal investigations. He says, "A poison is commonly defined to be any substance which when administered in *small quantity* is capable of acting deleteriously on the body."

In remarking on the definition, Dr. Taylor admits that it is too restrictive for the purposes of medical jurisprudence, and furnishes himself arguments which show that it would exclude many substances which should be included in a medico-legal definition, but he does not furnish any other.

The same remarks will apply to the definition given by all other authors as far as we know. According to the Micro-chemistry, "a poison is any substance which when introduced into the system and being absorbed, or by its direct chemical action, or when applied externally and entering the circulation, is capable of producing deleterious effects."

This may be considered an exhaustive definition—from it there is no escape, it includes all known substances which are poisons, and excludes all which are not. The salts of lead, tin, copper, antimony and potash, and a host of others, which, according to the definition of other authors, are not poisons, as in

small quantity they are not only perfectly innocuous, but valuable remedial agents, are brought under the definition, as, in the language of our author, they are capable when introduced into the system, of producing deleterious effects.

The division of the subject matter is natural and uniform, and arranged with great convenience for reference.

First comes the general nature and effects of each class of poison—then the special history of each individual member of the class—followed by the symptoms—period when fatal—fatal quantity—treatment—post mortem appearances—special chemical properties and tests—separation from organic mixtures—and lastly, quantitative analysis.

The work is rich in cases, richer by far than any other treatise on poisons—reported with great care and exactness, exhibiting every variety of influence which can be exerted on the human system by the agents. A chart of great value is bound with the volume, exhibiting the behavior of all the vegetable poisons, with the different re-agents, and so arranged that a single glance will indicate the nature of the substance. But the crowning excellence of the work is the beautiful and original illustrations, printed from steel plates, exhibiting the various crystalline forms of poisons as revealed by the microscope. Although other works have recently appeared, attempting, to some extent, microscopic illustrations, we believe the idea of using the microscope as a systematic agent in the detection of crystalline poisonous substances is justly due Professor Wormley. The value of these illustrations is very great, and constitutes one of the peculiar characteristics of the work. We are not surprised that others should adopt the suggestion derived from the prospectus issued by the author seven or eight years ago. We have, we believe, seen all these European publications, and can not but regard them as signal failures. To speak of these illustrations as inferior to those exquisite productions which give untold value to the micro-chemistry, would be no compliment to the latter. Their merits are so widely separated that no comparison could be made. As a work of art, these engravings claim our unbounded admiration, as a contribution to science, coming

from the gifted wife of the author, we hail them as another evidence of woman's capacity for both art and science.

The frequency with which poisons are administered for criminal purposes is well known to almost every one. Were it as well known that now scarcely any poison can be given for the destruction of human life, which can elude the scrutinizing search of the accomplished chemist, would it not vastly tend to diminish the frequency of these crimes? "To point out the method by which the presence of any of the poisons therein considered may be fully established, and give directions whereby those having only a limited knowledge of practical chemistry may acquaint themselves with the details of the analysis are," as the author states "in his introduction," "among the objects of the following pages."

We believe he has succeeded in making this knowledge clear and definite where it was obscure and contradictory, in vastly extending it by the addition of important new facts and processes, and rendering it available not only to those who have been specially engaged in chemical investigations, but to any who will carefully study these pages. The different steps in the progress of the analysis are so clearly and perfectly detailed as to be intelligible to any careful reader, but very moderately acquainted with the subject. To every physician who is ambitious to be posted in his profession, as well as every legal gentleman, we look on this work as an absolute necessity. Every physician can not become an expert in the science of toxicology. The time, means, and facilities for acquiring a perfect knowledge of the subject may not be at his disposal; but every intelligent physician should, in self-defense, be as fully posted on the subject as his circumstances will admit. He may be called at any moment on the witness stand, and be deeply mortified by having his ignorance exposed by the superficial knowledge of an attorney, who knows just enough of the subject to ask impertinent and puzzling questions.

All this may be avoided and much learned by a careful study of the *Micro-chemistry of poisons*.

In fact we feel that we can not say too much in commendation of the book, and no medical or legal library is complete without it, and to the chemist it is truly invaluable.

PHARMACEUTICAL DIRECTORY OF ALL THE CRUDE DRUGS NOW IN GENERAL USE; THEIR ETYMOLOGY AND NAMES, IN ALPHABETICAL ORDER.
By JOHN RUDOLPHY, New York, 536 Pearl street.

There has been no work issued of more practical value to the druggist and physician than this. It is comprehensive and most admirably arranged, so as to be of ready reference. No druggist or pharmacist can afford to do without it. It consists of four parts—

- 1st. English, Botanical, Pharmaceutical and German names.
- 2d. Botanical, English, Pharmaceutical and German names.
- 3d. Pharmaceutical, Botanical, English and German names.
- 4th. German, Pharmaceutical, Botanical and English names.

In his preface the author says: "In presenting the work to the profession it has been my desire that it may be the means of overcoming a long felt want, and it is the result of many years research.

"I have collected the scientific names of all crude drugs now in general use in the various languages named, and have also given the most popular local names of the drugs. The whole is arranged in alphabetical order, which will not only save time, but will facilitate the search for what is wanted."

We earnestly recommend the work to our druggists, and it would also be of infinite use to the physician. It is the only complete work on the subject, and fills a place of no ordinary importance as a Pharmaceutical Directory.

DRESSING FOR WOUNDS.—A solution of potassæ chloras (2 drachms) in glycerine (4 fl. ounces), mixed with alcohol (2½ ounces), forms a clear liquid which is readily absorbed by linen, and does not soil the clothing. It keeps the dressing moist for twenty-four hours, is easily washed off with luke-warm water, and is well adapted for soft granulations.

ARSENIC IN THE TREATMENT OF PULMONARY CONSUMPTION.—The clinical investigations of M. Moutard-Martin lead him to place considerable confidence in the employment of arsenic in the treatment of pulmonary consumption. He finds it more suitable to cases slowly progressive, than to such as are attended with fever. He has seen notable amelioration of the patient's condition from the use of arsenic, and in some cases actual suspension of the onward progress of the disease. He administers it in very minute doses, never exceeding two centigrammes, and considers perseverance in its use for a long time necessary to a favorable result.—*Gazette Medicale*.

M E D I C A L R E P O R T E R .

ST. LOUIS, AUGUST 15, 1868.

Missouri Medical College.—We would call attention to the annual announcement of this institution, in the advertising department of the REPORTER. We make the following extract from their circular :

The faculty of the Missouri Medical College are happy in being able to present to their alumni and the profession generally evidence of their present prosperous condition and future prospects. Having been reorganized after a temporary suspension during the war, with a complete corps of professors, the success which has thus far attended their efforts has been both gratifying and encouraging, and is such as to justify their most sanguine expectations as to the future of the college. The faculty have provided themselves with all the modern appliances for illustrating their respective courses, and they are determined that no effort on their part shall be wanting to give to the students in attendance on their lectures a full and complete course of instruction in all the branches of medical science usually taught in similar institutions in this country, that they may be thoroughly grounded in the elements of their profession and equal to all the demands of the present advanced state of medical science.

The ensuing course of lectures will commence on Monday, the 12th day of October next, and continue for five months. Preliminary lectures will be delivered from October 1st to the commencement of the regular session, to which all students are invited. The faculty earnestly desire to have a full attendance of the class at the commencement of the regular term in October, and students will do well to make their arrangements accordingly.

VITAL STATISTICS OF ST. LOUIS.

For the month of July, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	472	Still Born.....	42
White Females.....	313	Under five years of age.....	496
Colored Males.....	21	Between five and twenty years...	42
Colored Females.....	12	Between twenty and forty years...	125
Born in the United States.....	615	Between forty and sixty years...	111
Born in Germany.....	130	Between sixty and eighty years...	38
Born in Ireland.....	82	Bet. eighty and one hundred y'rs	6
Born in other countries.....	33	Total.....	860

DISEASES.

Apoplexy.....	36	Fever Typhoid.....	17
Albuminuria.....	1	Gangrena.....	1
Atrophy.....	8	Gastritis.....	3
Asthma.....	2	Hepatitis.....	6
Bronchitis.....	8	Hydrocephalus.....	22
Burns.....	1	Hydrothorax.....	1
Cancer.....	2	Inflammation.....	6
Carditis.....	2	Jaundice.....	1
Cerebritis.....	22	Laryngitis.....	2
Cholera Morbus.....	64	Meningitis.....	45
Cholera Infantum.....	85	Metritis.....	1
Convulsions.....	75	Old Age.....	3
Congestion of Brain.....	45	Paralysis.....	1
Cystitis.....	3	Peritonitis.....	3
Debility.....	26	Pertussis.....	4
Dentition.....	15	Phthisis.....	50
Delirium Tremens.....	5	Pneumonia.....	22
Disease of the Heart.....	4	Poison.....	1
Diarrhoea.....	42	Premature Birth.....	7
Diphtheria.....	3	Rheumatism.....	4
Dropsy.....	8	Rubeola.....	3
Drowned.....	11	Scarlatina.....	4
Dysentery.....	30	Scrofula.....	1
E enteritis.....	16	Sunstroke.....	30
Epilepsy.....	4	Suicide.....	1
Erysipelas.....	1	Syphilis.....	2
Fever Intermittent.....	17	Tetanus.....	11
Fever Remittent.....	11	Trismus.....	4
Fever Puerperal.....	2	Ulceration.....	4
Fever Congestive.....	3	Wounds.....	6
Total number of Deaths for July, 1866.....	587		
Total number of Deaths for July, 1867.....	620		
Total number of Deaths for July, 1868.....	860		

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND P. F. POTTER, M. D.

VOL. III.

ST. LOUIS, SEPTEMBER 1, 1868.

No. 18.

INDIGENOUS REMEDIES OF THE SOUTHERN STATES WHICH MAY BE EMPLOYED AS SUBSTITUTES FOR SULPHATE OF QUININE IN THE TREATMENT OF MALARIAL FEVER.

By JOSEPH JONES, M. D., Professor of Physiology and Pathology in the Medical
Department of the University of Nashville, Tenn.

SUMMARY.

Cephalanthus Occidentalis (Buttonwood)—Antiperiodic Properties—Value as a Febrifuge and Tonic—Effective Remedies in Chronic Pulmonary Complaints. Poplar or Tulip Tree (*Liriodendron Tulipifera*)—Botanical Character—Geographical Distribution—Chemical Composition—Examination by Dr. Rogers, 1802; by Dr. Emmet, 1882—Discovery of *Liriodendron*—Chemical and Physical Properties—Medical Properties and Uses of Poplar Bark—Testimony of Michaux, of Dr. Benjamin Rush, of Dr. J. T. Young, of Governor Clayton, of Drs. Barton, Bigelow and Eberle—Great value as an Antiperiodic. Small Magnolia or Sweet Bay (*Magnolia Glauca*)—Botanical Characters—Geographical Distribution—Chemical Composition—Examination of by Dr. Jacob Bigelow—Medical Properties—Uses—Known to the Indians—Testimony of Dr. Bigelow—A Domestic Remedy in Chills and Fever—Dose. Cucumber Trees (*Magnolia Acuminata*)—Big Laurel (*Magnolia Grandiflora*)—Umbrella Tree (*Magnolia Tripetala*).

NO. 4.—POND DOGWOOD—*CEPHELANTHUS OCCIDENTALIS* (BUTTONWOOD)—Walt.

Botanical Characters.—Common calyx; obconical superior, funnel-shaped. Receptacle globose, hairy. Capsule four celled, not opening. Seed solitary. A shank six to fifteen feet high; the wood soft, spongy and pithy in the centre; bark rather smooth. Stem jointed, much branched, the branches generally opposite. Leaves opposite and terminate, ovate. Canceolate, slightly acuminate, very entire; the upper surface glabrous, shining; the veins on the under surface pubescent, four to five inches long and two to two and one-half inches wide. Petioles half an inch long. Pubescent slightly winged. Flowers axillary and terminal. Peduncles (common) two to three inches long; pubescent. Calyx (proper) one leaved, angled, superior, four cleft, the segments obtuse. Corolla one petalled, tubular, four times as long as the calyx; hairy

within, white, the border four cleft, segment obtuse. Filaments four, very short, attached to the base of the corolla at the base of each fissure. Anthers oblong; sagittate, pale brown. Germ angled. Style filiform, twice as long as the corolla. Stigma capitate. Capsule angled, inversely pyramidal, second celled. Receptacle globose, very hairy. Grows in swamps, ponds and stagnant waters. Flowers in July.—ELLIOTT. *Sketch of the Botany of South Carolina and Georgia*. Vol. 1, pp. 186-187.

Geographical Distribution.—The swamps, ponds and stagnant waters of the United States, and especially of the Southern portions of South Carolina and Georgia.

Medical Properties—Uses.—Elliott says that the inner bark of the root is an agreeable bitter, and frequently used as a remedy in obstinate coughs. (Vol. 1, p. 187.) It is considered as a valuable domestic remedy in the country for various complaints. "A wash of the decoction of the plant is said to be good for the palsy." (View of South Carolina by John Drayton, p. 62.) Some botanists have thrown this plant into the same class as *Pinckneya Pubens*, *Cinchmacede* (coffee tribe), and it has been used as both a tonic and febrifuge, and decided antiperiodic properties have been ascribed to it. Merat notices it as an anti-venereal. A writer in the *Mercury*, of Charleston, S. C., during the recent war, says: "The root of the Buttonwood or Crane Willow, a shrub which is conspicuous in our swamps in the spring, when boiled with honey and comfrey, makes a pleasant syrup, which is the most effective remedy known to me in diseases of the lungs. It is thought by many intelligent persons to be a radical cure for consumption."—*Resources of the Southern Fields and Forests*, by Francis Pezu Porcher, M. D. 1868. Page 405.

I have employed the decoction of the bark of this small tree or shrub with benefit as a tonic in depressed states of the system following malarial fever, and also with the best effects in obstinate coughs and affections of the lungs in the form of syrup and candy.

We need farther light, the result of careful investigation, upon the anti-periodic powers of the *Cephalanthus*; its botanical relations, as well as popular belief in certain parts of the country, indicate that their properties are potent and valuable.

NO. 5.—POPLAR OR TULIP TREE (*LIRIODENDRON TULIPIFERA*)—Linn.

Botanical Characters.—Calyx three leaved. Petals six. Capsules (Samarae) imbricated, forming a strobilus, one to two seeded, not opening. Leaves truncated, perminate, four lobed; calyx three leaved. This is one of the largest trees of the American

forests. In the low countries of the Carolinas and Georgia, it is somewhat rare, and seldom exceeds three feet in diameter, but in the fertile soils of the Western country (in Kentucky, Tennessee and Alabama), it is sometimes found twelve to thirty-six inches in diameter, and from fifty to even one hundred and twenty feet in height. The wood of this tree, though soft, is durable. The leaves are alternate three lobed, with the middle lobe truncate, and varying with the angles of the lobe obtuse, acute, and acuminate, glabrous, on petioles two to three inches long. Flowers solitary, terminal. Leaves of the calyx concave. Petals obovate, lanceolate; of a dull yellow color, tinged with red. Stamens numerous, disposed in a simple series shorter than the petals. Germs numerous on a conical receptacle. Grows in moist fertile soils. Flowers in May and June.—ELLIOTT. *Sketch of Botany of South Carolina and Georgia*. Vol. 2, pp. 40-41.

Geographical Distribution.—According to Michaux, the southern extremity of Lake Champlain, in latitude 45°, may be considered as the northern limit, and the Connecticut river, in the longitude of 72°, as the eastern limit of the Tulip Tree. It is only beyond the Hudson, which flows two degrees farther west, and below 43° of latitude, that it is frequently met with and fully developed. It is multiplied in the Middle States, in the upper parts of the Carolinas and Georgia, and still more abundantly in the Western country, particularly Kentucky. Its comparative rareness in the maritime parts of the Carolinas and of Georgia, in Florida, Alabama and lower Louisiana, is owing less to the heat of the summer than to the nature of the soil, which, in some parts, is too dry, as in the pine barrens, and in others too wet, as in the swamps which border the rivers.

The Western States appear to be the natural soil of this magnificent tree, where they have been found twenty-three feet in circumference, and from one hundred and twenty to one hundred and forty feet in height.—*Forest Trees of America*. Vol. 2, p. 35.

Chemical Composition.—The first chemical examination of the bark of the *Liriodendron Tulipifera*, appears to have been made in 1802, by Dr. Rogers. From the state of organic chemistry at that time, this examination was almost necessarily imperfect, and resulted in the determination of nothing more than gum resin, an acid supposed to be muriatic, iron, calcareous salt, mucus and fecula, as its chief constituents.

In 1832, Dr. J. P. Emmet,* of the University of Virginia, announced the discovery of a peculiar principle in the *Peplar* bark, which he called *Liriodendron*, and which he described, in the pure state, to be solid, white, crystallizable, brittle, inodorous at

*Journal of the Philadelphia College of Pharmacy. iii. 5.

40°, fusible at 180°, and volatile and partly decomposed at 270°, and of a slightly aromatic odor, and a bitter, warm, pungent taste; insoluble in water, soluble in alcohol and ether; water precipitates it from its alcoholic solution; incapable of uniting with alkalis and acids; alkalies precipitated it from the infusion or decoction of the bark by combining with the matter which rendered it soluble in the water. It is obtained by macerating the root in alcohol, boiling the tincture with magnesia until it assumes an olive green color, then filtering, concentrating by distillation until the liquid becomes turbid, and finally precipitating the Liriodendrine by the addition of cold water. When carefully heated in a glass tube closed at one end, it goes off a white vapor, which condenses again, without any signs of crystallization. Prof. Emmet regarded it as analogous to camphor. The fact that the bark of the Liriodendron is weakened by age, and so far loses its bitter and aromatic taste as to become almost insipid, gives force to the opinion that its peculiar properties reside in this volatile principle—Liriodendrine.

Medical Properties and Uses.—Formerly this bark was employed in the United States, both in domestic and regular practice, and from the testimony which was then published in favor of its decided value as an aromatic, stimulating tonic, diaphoretic and anti-periodic, it appears to be well worthy of the careful examination of physicians at the present time.

Michaux,* in his splendid work on the Forest Trees of America, states that in some parts of Virginia the inhabitants were accustomed to steep the bark of the roots, with an equal portion of Dogwood bark, in brandy, during eight days. Two glasses of this tincture, taken every day, sometimes cures intermittent fevers.

Dr. Benjamin Rush† states that he employed the Poplar bark in the treatment of intermittent fever “with as much satisfaction as any of the common bitters of the shops.”

The testimony of Dr. J. T. Young, of Philadelphia, to its value is decided, and well worthy of consideration at the present

*Vol. 2, p. 49.

†Transactions of the College of Physicians of Philadelphia, 1798.

time, when we are liable to be deprived of our most powerful and valuable remedies. In a letter* addressed to Governor Clayton, of Delaware, in 1792, he thus states the results of his experience :

"The *Liriodendron tulipifera*, Tulip or Poplar tree, grows throughout the United States of America. The best time to procure the bark for medicinal purposes is in the month of February, as the sap at this time, being more confined to the root, increases its virtue. It possesses the qualities of an aromatic—a bitter, and an astringent; the bitter quality is greater, the astringent less than in the Peruvian bark. It likewise possesses an aromatic acrimony, hence I infer it is highly antiseptic and powerfully tonic. I have prescribed the Poplar bark in a variety of cases of intermittent fever; and can declare from experience it is equally efficacious with Peruvian bark, if properly administered. In the phthisis pulmonalis, attended with hectic fever, night sweats and diarrhea, when combined with laudanum, it has frequently abated these alarming and troublesome symptoms. I effectually cured a Mr. Kiser, fifty years of age, who was afflicted with a catarrh and dyspeptic symptoms for five years, which baffled the attempts of many physicians and the most celebrated remedies, by persevering in the use of the Poplar bark for two weeks.

"I can assert from experience there is not, in all the *materia medica*, a more certain, speedy and effectual remedy in hysteria than the Poplar bark, combined with a small quantity of laudanum. I have used no remedy in cholera infantum but the Poplar bark, after cleansing the *primæ viæ*, for these two years. It appears to be an excellent vermifuge. I have never known it to fail in a single case of worms which has come under my observation. I prescribed it to a child when convulsions had taken place. After taking a few doses, several hundreds of dead ascariæ were discharged with the stools. The dose of the powder to an adult is from a scruple to two drachms; it may likewise be used in tincture, infusion or decoction; but its virtues are always greatest when given in substance."

*Carey's American Museum. Vol. 12.

Governor Clayton, in his reply, observes: "During the late war, Peruvian bark was very scarce and dear. I was at the time engaged in considerable practice, and was under the necessity of seeking a substitute for the Peruvian bark. I conceived that the Poplar had more aromatic and bitter than the Peruvian, and less astringency. To correct and amend those qualities, I added to it nearly an equal quantity of the bark of the root of Dogwood (*Cornus Florida*, or Boxwood), and half the quantity of the inside bark of the White Oak tree. This remedy I prescribed for several years, in every case in which I conceived the Peruvian bark necessary or proper with, at least, if not superior, success. I used it in every species of intermittent, gangrenes, mortifications, and, in short, in every case of debility. It remains to determine whether the addition of those barks to the Poplar increases its virtues or not; this can only be done by accurate experiments in practice."

Dr. Barton* recommended the bark of the Poplar in chronic rheumatism and in gout; and from its tendency to produce diaphoresis, together with its tonic powers, there can be little doubt of its value in certain conditions of these diseases. Dr. Eberle† employed it repeatedly in conjunction with the *Almus Aspera*, in the form of decoction, in the treatment of the advanced stages of dysentery, with satisfactory results. Dr. Bigelow‡ used it with success as a stomachic. The powdered bark, in union with steel dust, has been prescribed with great advantage in debilitated states of the stomach.||

The most efficacious form of administering the bark of the *Liriodendron tulipifera* is in substance in the form of powder—3ss to 3ij. The infusion 3j of powdered bark to one pint of water, may be administered f 3j to f 3ij, and the saturalient tincture in the dose of f 3j. The infusion and the tincture are not as efficient as the powder. No use that we are aware of has, as

*Barton's Collections..

†A Treatise on *Materia Medica* and Therapeutics, by John Eberle, M. D., &c. Philadelphia, 1830. Vol. 1, p. 282.

‡American Medical Botany, &c., by Jacob Bigelow, M. D., &c. Boston, 1818. Vol. 2, p. 112.

||Thacker's Dispensatory.

yet, been made of the Liriodendrine. The seeds are said by Rafinesque to be laxative; this fact, however, has been noticed by no other writer, and needs confirmation. The leaves have been used as an external application in headache; and an ointment prepared with them has been used with good effect in ulcers. In the administration of the bark in powder, the bowels should be first opened by a cathartic; and if the bark produces pain in the bowels, it should be combined with small quantities of laudanum.

NO. 6—SMALL MAGNOLIA, OR SWEET BAY—MAGNOLIA GLAUCA—Linn.

Botanical Characters.—Leaves oval lanceolate, glaucous underneath; petals obovate, tapering at the base. A shrub frequently becoming a small tree, remarkable for its white or somewhat glaucous bark. Leaves alternate, on petioles about an inch long, acute, shining, and when young pubescent, underneath glaucous, pubescent when young, having a silken lustre. Flowers solitary, terminal. Leaves of the calyx oval, glabrous, membranaceous, sprinkled with pellucid dots, as long as the corolla. Petals generally nine, obovate, white, as long as the receptacle. Filaments very numerous, compressed, with the point acuminate and extending beyond the anthers. Anthers attached to the inner side of the filaments. This is probably the most fragrant plant in our forests. It grows in great profusion along the margin of the rich swamps which border our rivers, and in the morning and evening, during the period of its flowering, the atmosphere of our streams is often literally perfumed with its fragrance. Flowers April to May. We have a variety with perennial leaves, which sometimes become a tree fifty to sixty feet high. I have been able to discover no other distinction between these two plants than the difference of habit.—ELLIOTT. *Sketch of the Botany of South Carolina and Georgia.* Vol. 2, p. 37.

Geographical Distribution.—The Sweet Bay has the most extensive range, especially near the seaboard, of any of the species of the Magnolias. According to Professor Bigelow,* its most northern boundary appears to be in a sheltered swamp in Manchester, Cape Ann, about thirty miles north of Boston. It here attains to but small size, and is frequently killed to the ground by severe winters. It is common in the Middle States, and abounds in the maritime ports of the Southern States. In North Carolina and South Carolina it is found in greatest abundance within the limits of the pine-barrens, growing abundantly in the branches, marshes or swamps traversing the pine-barrens. It is not abundant in the large swamps bordering the rivers, and is very rarely found upon the islands which border the sea coasts.

Chemical Composition.—As far as our information extends, no complete chemical analysis has been made of the bark of this tree. It is highly probable that its constituents will be found

*American Medical Botany. Vol. 2, p. 68.

to resemble closely those of the *Magnolia grandiflora*, which, according to the examination of Dr. Proctor,* contains a green

**American Journal of Pharmacy*. Vol. 14, p. 95.

resin, a volatile oil, and a peculiar crystallizable principle, analogous to Liriodendrine, which, as we have previously stated, was discovered by Dr. J. P. Emmet in the bark of the Tulip tree. Dr. Bigelow gives in his most valuable *American Medical Botany* the fullest account of the chemical constitution of the bark of the *Magnolia glauca* with which we are acquainted. The following are the results of his examination :

The bark of the *Magnolia glauca* has a bitter taste, combined with a strong aromatic pungency, which approaches that of *Sassafras* and of the *Acorus calamus*. The aroma resides in a volatile portion, which is probably an essential oil, or a variety of camphor. It is lost from the bark in the dry state after it has been kept some time. Water distilled from the green bark has its peculiar flavor, with an empyreumatic smell. No oil appears on the surface when the experiment is conducted in the usual way. The dried bark affords a little resin, and more of a bitter extractive substance. Chalybeate tests produce a very slight darkening of the green color of the decoction, but gelatine occasions no change. This might be anticipated from the little taste of astringency in the bark.—*American Medical Botany*. Vol. 2, p. 70.

Medical Properties and Uses.—The Indians used the bark of the *Magnolia glauca* as a remedy for autumnal fever and rheumatism, and in many parts of this country it has been used with success in the treatment of malarial fever, both in domestic and regular practice.

Dr. Jacob Bigelow thus testifies to its medicinal properties and value : As a medicinal article, the *Magnolia* is to be considered an aromatic tonic, approaching in its character to *Cascarilla*, *Canella*, and articles of their class. Considered simply in regard to its tonic powers, it is probably of a secondary order, though from the additional properties which it possesses of a warm stimulant and diaphoretic, is found useful in certain disorders. Chronic rheumatism is one of the diseases in which it

exhibits most efficiency. Not only the bark, but the seeds and cones, which are strongly imbued with the sensible qualities of the tree, are employed in tincture with very good success in this disease.

In intermittent and remittent fevers the Magnolia is one of the many tonics which have been resorted to for cure by the inhabitants of the marshy countries where they prevail. Sufficient testimony has been given in favor of the bark of this tree to warrant a belief that it is fully adequate to the removal of fever and ague, when administered, like the Cinchona, in liberal quantities between the paroxysms. In the more continuous forms of fever, of the typhoid type, it has also received the commendations of physicians.—*American Medical Botany. Vol. 2, pp. 70-71.*

The dose of the powdered bark is from half a drachm to a drachm, repeated according to the character of the case. A decoction may be made in the proportion of one ounce of the powdered bark to the pint of water. This may be administered in doses of from $f\ 3i$ to $f\ 3ij$, and repeated every one, two or three hours, according to circumstances.

An extract has been made from it, but its powers have not been sufficiently tested. An infusion of the bark in brandy has been employed in rheumatism.

The cones and seeds have likewise been employed to make a tincture, which has been a popular remedy in the treatment of chronic rheumatism, and as a prophylactic against intermittent fever.

NO. 7—CUCUMBER TREE (*MAGNOLIA ACUMINATA*)—*Mich.* NO. 8
BIG LAUREL (*MAGNOLIA GRANDIFLORA*)—*Mich.* NO. 9, UMBRELLA TREE (*MAGNOLIA TRIPETALA*)—*Wild.*

Our information with reference to these three species of Magnolia, although less definite and far more meagre than that which we have presented concerning the *Magnolia glauca*, still, as far as it extends, tends to establish their value in the treatment of malarial fever.

The Cucumber tree (*Magnolia acuminata*), which extends from the Falls of Niagara along the whole mountainous tract

of the Alleghanies to their termination in Georgia, and also along the Cumberland mountains in Tennessee, has been employed by the inhabitants of the country bordering on the Alleghanies as a preventive of intermittent fever. Michaux* states

*Forest trees of America. Vol. 2, p. 16.

that they gather the cones about midsummer, when half ripe, and steep them in whisky. A glass or two of this liquor, which is extremely bitter, they habitually take in the morning as a preventive against autumnal fevers.

We are not aware that there are any recorded observations of the results of these attempts to ward off the malarial fever. It would, therefore, be highly important that physicians living in the regions where this tree is found should carefully determine the value of the cones as a prophylactic. The discovery of a native prophylactic against malarial fever would be of incalculable value to our planters in the rich lowlands of the South, and especially to bodies of white men exposed during marches and in the defense of our coast to the destructive exhalations of marshes and rice fields.

We have before alluded to the discovery by Dr. Stephen Proctor of a principle in the bark of the *Magnolia grandiflora*, analagous to the principle Liriodendrine of the Tulip tree. In addition to this he found a valuable oil and resin.

The medical properties of these different species appear, as far as our very limited information extends, to be almost identical, and it is probable that they may be substituted one for the other without inconvenience in the same doses recommended for *Magnolia glauca*. We need, however, accurate analyses and extended medical observations.

THE CALOMEL BATH.—From some recent experiments which he has made, Mr. Henry Lee has found that the irritating agent which is given off from the calomel bath, especially when this is freely used, is nothing more or less than hydrochloric acid. The effect of this acid is negatived by the use of a tray of water surrounding the pan which contains the calomel, so as to ensure its dilution. This is a little practical matter which is not sufficiently attended to by practitioners, and its neglect of course readily accounts for one source of unfair objection to the action of the bath.—*Lancet*.

ORTHOPÆDIC APPARATUS AND DESCRIPTION OF THE MECHANICAL APPLIANCES EMPLOYED IN THE TREATMENT OF DEFORMITIES AND DEFICIENCIES OF THE BODY, WITH DIRECTIONS FOR TAKING MEASUREMENTS FOR THEIR APPLICATION.

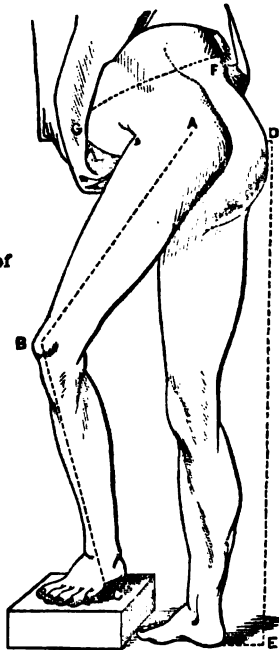
By D. W. KOLBE, Manufacturer of Surgical Instruments and Machinist to the Philadelphia Orthopædic Hospital.

APPARATUS FOR DEFORMITIES OF THE LOWER EXTREMITIES—APPARATUS FOR COXALGIA, OR HIP DISEASE.

Fig. 32 is intended as a guide for measurement for apparatus for ununited fractures, resections and hip-joint diseases.

Fig. 32.

- G F—Circumference of body.
A B—Length from centre of hip-joint to middle of patella.
B C—From patella to sole of foot.
D E—Length of sound limb.
Circumference above and below the knee.



State also which limb is affected, and the age and sex of the patient.

In ununited fracture or resection it is necessary to mark the seat of fracture or excision of the bone; also two inches above and below. The length from the perineum to the sole of the foot should be given.

In all cases where a shoe is required, the measure for it should be taken as directed in Fig. 41.

Fig. 33.

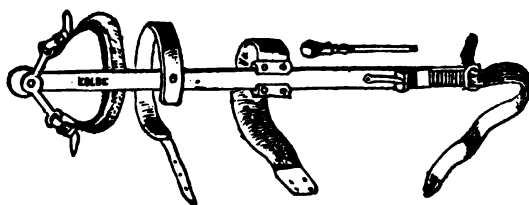


Fig. 34.

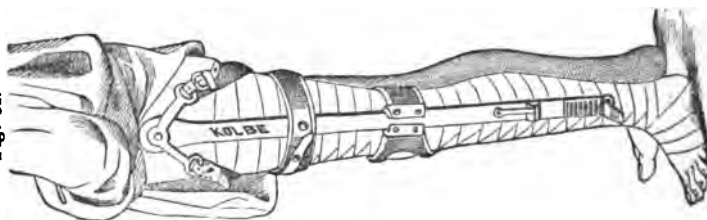


Fig. 35.

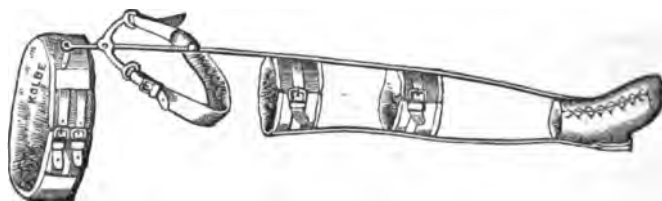
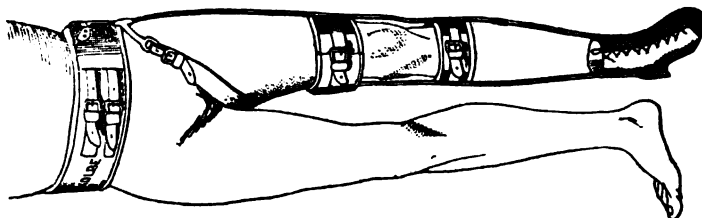


Fig. 36.



Figs. 33 and 34 show Davis' splint for coxalgia, and the mode of its application. In ordering the apparatus, send the measurements directed at Fig. 32.

Fig. 35 gives an illustration of an apparatus for coxalgia, modified by Prof. J. Pancoast, of the Jefferson Medical College. Extension is obtained by means of a ratchet, with the aid of a perineal band. In ordering this apparatus, employ as a guide the measurements given at Fig. 82.

Fig. 36 illustrates the mode in which the apparatus is applied.

Figs. 37 and 38 show an apparatus for coxalgia, modified by Dr. D. N. Agnew, surgeon of the Pennsylvania Hospital. Extension is obtained by means of an extending screw or ratchet. The upper part of the splint is designed to rest posteriorly against the tuberosity of the ischium, and internally against the perineum. This mode of construction does away with the necessity of perineal band of other apparatus.

For the mode of taking measurements for this apparatus, see Fig. 82.

Fig. 87.

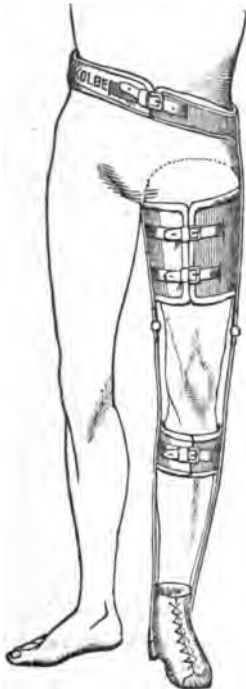


Fig. 88.



Fig. 39.



Fig. 40.



Figs. 39 and 40 illustrate the wire splint and the mode of its application in hip disease.

This splint is intended as a substitute for the carved splint. For the manner of taking measurements see Fig. 32.

APPARATUS FOR GENU VALGUM, OR KNOCK-KNEE.

Fig. 41.



Guide for Measurements.

Circumference of upper third of thigh.

Circumference above knee.

Diameter of knee.

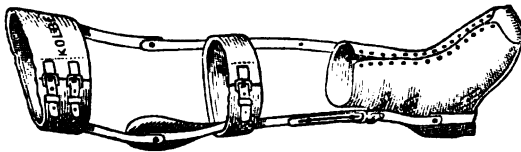
Circumference below knee.

Length from upper third of thigh to centre of knee.

From centre of knee to sole of foot.

In taking the measure of the foot, let it rest lightly on a sheet of paper, and draw a line around it. Take the circumference immediately above the ankle, around the heel and instep, over the instep, and around the toes. It is also desirable to have the outlines of the inner side of the knee-joint, which can be obtained as directed at Fig. 7. Age and sex of the patient should be given.

Fig. 42.



Kolbe's Apparatus for Knock-knee.

Knock-knee is an inward inclination of the knees, caused by the preternatural extension of the internal lateral ligaments of the knee joint, and increased by the superincumbent weight of the body. To relieve this deformity, numerous mechanical contrivances have been constructed and employed. The one represented in Fig. 42 is the simplest and most convenient for the patient to wear, while its efficacy is none the less. It consists of a plain shoe, to which two lateral steel bars reaching to the upper third of the thigh are attached, and connected with calf and thigh bands; and provided with joints corresponding with the natural articulations, to allow locomotion. The knee is confined in its normal position by a well-padded knee-cap. Prof. Gross has described this apparatus in the last edition of his work on surgery.

APPARATUS FOR GENU EXTRORSUM, OR BOW-LEGS.*Guide for Measurements.***Fig. 43.**

Circumference of upper third of thigh. —

Circumference above knee. —

Diameter of knee. —

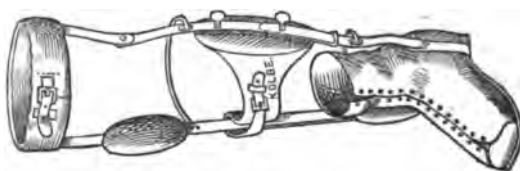
Circumference below the knee. —

Circumference. —

The length to be taken on the inner side of the limb
from the upper part of the thigh to the centre of
knee, from the centre of knee to sole of foot.



The curvature of the outside of the leg should be given, which can be obtained as directed at Fig. 7. The age and sex of the patient should also be stated.

Fig. 44.**Kolbe's Apparatus for Bow-Leg.**

In taking the measure for the shoe, see Fig. 41. If the deformity is very marked, a photograph showing the form of the lower extremity will be advantageous.

As bow-legs is a deviation in the opposite direction to that of knock-knee, whether it results from elongation of the external ligaments of the knee, or by curvature of the leg bones, the mechanical appliance for it illustrated in Fig. 44 is constructed

upon the same principle as that described at Fig. 42, with the difference that, in addition, a steel plate well padded is attached to the external lateral bar, and regulated by means of screws, while at the same time provision is made, by the continuation of the leather padding, to correct anterior curvature of the tibia.

Dr. Gross recommends the above apparatus in his work on Surgery, and Dr. Wales, U. S. N., in his "Mechanical Therapeutics."

APPARATUS FOR ANCHYLOSIS OF THE KNEE-JOINT.

Guide for Measurements.—Circumference of limb at D C, B A, L H and K I Length from E to F, and F to G. The measure for shoe to be taken as directed at Fig. 41.

Fig. 45.

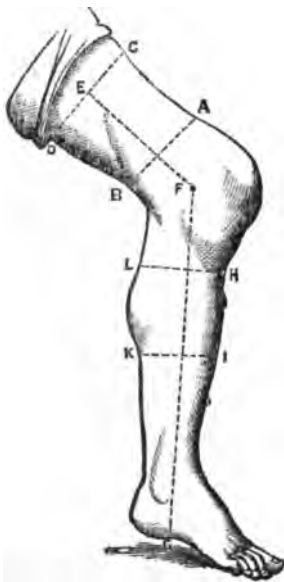
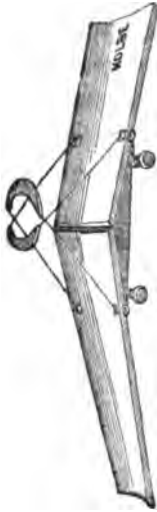
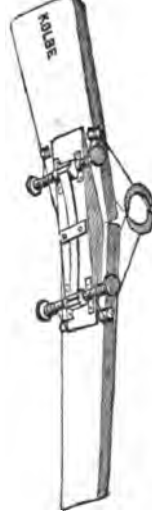


Fig. 46.

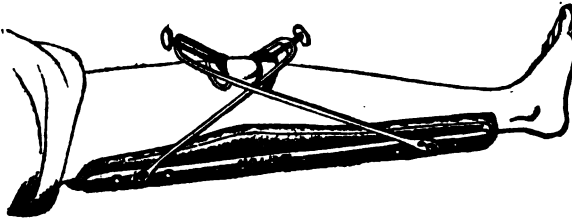


Fig. 46 shows the application of my apparatus for ankylosis of the knee-joint. At the suggestion of Prof. Pancoast this apparatus has been modified so as to extend to the foot, thereby giving the patient additional comfort and support, and greatly facilitating walking.

APPARATUS FOR FRACTURE OF THE PATELLA.**Fig. 47.****Fig. 48.****Boisnot's apparatus.**

(See "Transactions of the American Medical Association," 1885.)

Measurements.—Circumference of thigh and leg. State age and sex of patient.

Fig. 49.**Lansdale's Apparatus.**

Dr. Lansdale's apparatus for the treatment of fracture of the patella consists of—1. A splint of one-inch pine board, concave at each end to receive the thigh and calf, six inches wide and eighteen inches long. 2. A muslin bag six inches square, filled with sawdust and sewed up, and tacked to the middle of the splint, to afford a firm support to the knee-joint and keep it in an easy position of slight flexion. 3. Two iron bows to button

on each side of the splint near its extremities, and having a female screw in the middle to receive two thumbscrews, each operating on a semilunar pad backed with iron. 4. Across each extremity of the splint should be tacked a piece of bandage or strong tape (not represented above); these are to be brought up and tied over the thumbscrews, to prevent the pads from riding up over the patella when the screws are tightened.

Measurements.—Circumference of thigh and leg. State age and sex of patient.

Dr. Levis' apparatus, Fig. 50, consists of a strap padded where it lies above the patella. This strap is continued down the leg on each side, and is buckled to a padded stirrup-strap, which gives a fixed point for extension from the sole of the foot. There is also a broad pad which rests behind the knee. Through a ring attached to this pad the first strap passes, and thus has

Fig. 50.



Levis' Apparatus.

Fig. 51.



Hartshorne's Apparatus.

its direction changed. The lower fragment of the fractured

patella, having no force to displace it, is retained in position merely by a strip of adhesive plaster.

The apparatus is complete in itself, requiring no splints, and is adaptable to limbs of any size.

It is claimed that with this apparatus a patient can be well treated while walking about on crutches.

Measurements.—Circumference above knee, and length from knee to sole of foot.

Dr. Hartshorne's apparatus, Fig. 51, consists of a light tin case, fitting to the limb behind, lacing in front of the thigh and the leg, and provided with straps (elastic or not, according to circumstances), which are to be applied as usual across the joint, above and below the patella, and drawn obliquely, to be fastened and tightened by means of a wedge, screw, or hooks.

Measurements.—Circumference of thigh and leg. State age and sex of patient.

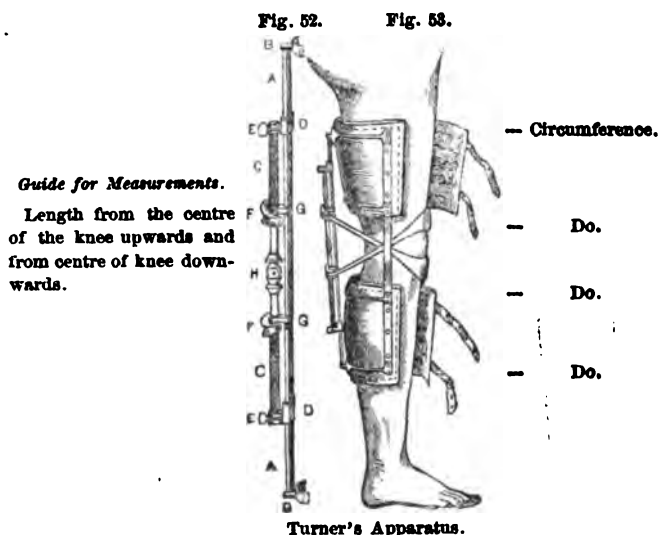
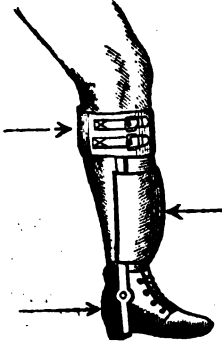


Fig. 52 shows the regulating screw by means of which the surgeon is enabled to confine the patella to its normal position.

Fig. 53 shows the application of the apparatus.

APPARATUS FOR ANTERIOR AND LATERAL CURVATURE OF THE LEG.

Fig. 54.



**Apparatus for anterior curvature
of the leg.**

Fig. 55.



**Apparatus for lateral curvature.
of the leg.**

(Guide for measurements,
see Fig. 48.)

The above illustrations are only adaptable in slight cases of this deformity.

BIGGS' APPARATUS FOR BUNIONS.

Fig. 56.



Guide for Measurements.

— Circumference over the instep.

Outline of the foot obtained by placing it on a sheet of paper and drawing a line around it.

Prof. Gross has described the above in the last edition of his work on surgery, and Dr. Wales, U. S. N., in his "Mechanical Therapeutics."

DIPHTHERIA.

By J. N. Coons, M. D., Shelbyville, Mo.

Having, some years since, had my attention specially called to Diphtheria from its prevalence and fatality in the northern portion of our county, and from having been called as counsel in several severe cases, some *in articulo mortis*, I was led to inquire if the treatment, then recommended by the highest authorities, and which had been sedulously followed in these cases, was that best calculated to effect a cure. After much reflection and a good deal of observation, I came to the conclusion that the great degree of fatality attending this treatment, as evidenced in these cases, and shown in the reports of cases treated by eminent physicians of the Eastern States, would at least justify a departure from the routine of swabs, caustics, *et id omne genus*, so generally practiced. Admitting it to be a constitutional affection, I nevertheless observed that the gravity of the constitutional symptoms was usually in proportion to the amount of local disease of the throat. To subdue this local disease seemed, therefore, a prominent, if not the chief indication. For this purpose, casting aside caustics, I adopted in the main the same *soothing* plan of treatment as I would use to control a *non-specific* inflammation, not forgetting, however, to give the necessary constitutional remedies. Of some two hundred cases of Diphtheria treated in this way, and running through several years' practice, it has been my good fortune to save all but three. Believing this greatly lessened degree of fatality to be due not entirely to a *milder* form of disease, I append, as illustrative of the treatment, the following case:

May 9, 1868—9 A. M.—Was called to see Jennie M——, six years of age, and of delicate constitution. Found on inquiry that she was taken sick with a fever and sore throat on yesterday morning, and had been treated by application of *spts. turpentine* to surface of the neck, and administration of small doses of fever drops, which I had at some previous time left in the family, and compounded as follows:

No. 1. R.—Tinct. veratri vir.

Vin. ipecacuanha, a. a., f ʒj.

Syrupi Scillæ, - - f ʒj.

M—Signa.—Half a teaspoonful every three hours in fever.

This morning I find the pulse small, hard, beating 112 to the minute, with a sharp, nervous thrill; surface hot; breathing hurried and slightly labored; throat swollen externally on either side beneath the angles of the jaw; fauces and tonsils red and swollen; left tonsil, velum palati and uvuli covered with the usual diphtheritic membrane. Prescribed internally half a drachm of chlorate of potassa in the twenty-four hours, and during fever prescription No. 1, and in the absence of fever the following:

No. 2. R.—Vin. ipecacuanha.

Tr. sanguinaris canad., a. a., f ʒj.

Syrupi scillæ, - - - - f ʒj.

M—Signa.—Half a teaspoonful every three hours. Castor oil to move the bowels once daily. Diet, bread and milk. I directed further, turpentine to be rubbed upon throat, and hot vinegar fomentations or poultices over it, also a gargle of plumbi acet.; and lest it do not reach all the diseased surface, I directed equal parts by weight of plumbi acet. and pulv. acaciæ to be well rubbed together and blown upon the fauces through a common pipe-stem, immediately after taking medicine, every three hours.

May 10.—Found patient free from fever, sitting up, looking cheerful, but pale; pulse 80 and soft; breathing quiet and regular; skin moist; diphtheritic membrane gone from uvula and arch of palate, but still partially covering left tonsil. Continued treatment, except the powder was directed to be blown into the throat only three times a day. Case rapidly progressed to recovery.

DISINFECTANTS.

By Dr. WILLIAM PROCTOR, F. C. S.

Dead organic matter passes rapidly into a state of change or decomposition, the nature of the resulting products being dependent upon numerous collateral circumstances. Amongst these changes putrefaction is specially distinguished by the foetid character of the matter evolved. The more complex the composition of the bodies, the more unstable is their equilibrium, the more readily do their constituents enter into a state of change, and the more offensive are the emanations. Even the final products of putrefaction (especially when air is excluded or imperfectly supplied) are of this character, comprising as they do sulphuretted hydrogen, sulphide of ammonium, phosphides, ammoniacal, and other like compounds. It would not seem that the ultimate products of putrefactive decomposition directly generate zymotic disease, although they may produce their individual special effects, but that indirectly they promote its invasion by the exclusion of pure air, by forming a nidus for the nourishment of morbid matter, and, by depressing the powers of the system, render the body more predisposed and less resisting, and cause a more rapid spread of specific disease. It is rather to some intermediate product of the putrefactive process, and especially to the organic effluvia still in a state of change, that the power of setting up zymosis is to be referred. But the resulting gases may themselves either destroy life rapidly by acute poisoning, with symptoms well recognized, or produce a certain class of endemic diseases not transmissible under ordinary circumstances. Dr. H. Barker has submitted this matter to the test of experiment by conducting the air of a cesspool, containing carbonic acid, sulphuretted hydrogen, and sulphide of ammonium, into a box in which animals were confined; the symptoms which resulted resembled the milder forms of continued fevers common to the dirty and ill-ventilated homes of the lower classes of the community, and Dr. Barker attributes the results not to the organic but to the gaseous matter. The effects of these gases were then tried separately on confined animals, and he found that of sulphuretted hydrogen 0.5 per

1000 may produce serious symptoms, and 4.2 per 1000 was rapidly fatal, but not with the symptoms or pathological conditions of cesspool fever; while on the other hand, a volatile alkaline body, such as sulphide of ammonium, persistently administered, produced both the symptoms and pathology of fever. Dr. Dundas Thompson was one of the first to recognize the importance of organic matter as a constituent of the air of towns, and to enunciate the proposition that the gases evolved during putrefaction are not the main sources of danger. The existence of a large amount of foreign matter in the atmosphere has been satisfactorily demonstrated. If pure distilled water in an open vessel is exposed to the air, the loss from evaporation being made up by the addition of fresh liquid, on the careful microscopic examination of the sediment which is formed, monads, amœbæ, and other of the lowest forms of life, will be detected. Pasteur placed soluble gun-cotton in a glass tube, and by means of an aspirator caused a current of air to pass through it for several hours. The cotton being dissolved, and the residue examined, was found invariably to contain organic growths, and he proved that the air of inhabited places contains a greater relative number of germs than the air of uninhabited regions. Over the mouth of an impure cesspool a glass globe was placed filled with ice; on its surface the aqueous vapor, with its soluble suspended matter, was condensed. This liquid was turbid, had an offensive odor and alkaline reaction, and contained small flakes of matter, which under the microscope had the appearance of organic *debris*, and with it there were vibriones, monads, and other low forms of life, with confervoid and furgoid filaments. Somewhat similar results are obtained from the vapor condensed by placing a bell-jar over putrid meat. Experiment has shown that in such an impure atmosphere milk is rapidly changed, and meat speedily putrifies. It is eminently a suggestive fact that these germs are not everywhere present in all forms and equal numbers. They exist numerous in the lower strata of the air and in densely populated towns, becoming fewer as we rise higher, and at such elevations as the summit of the Alps they are almost absent.

These conditions, then, are general; but in certain localities special germs are detectible. M. Chalvet has collected putrescent organic matter from the walls of hospital wards; and when watery vapor near a suppurating surface was collected, it was found to be charged with irregular corpuscles resembling dried pus. Eiselt, of Prague, found small cells, like pus cells, in the air of a ward in which epidemic ophthalmia was raging.

These facts afford just reasons for concluding that the air is a medium through which diseases may be transmitted either by specific germs or by the presence of organic matter in a state of change which may set up certain so-called endemic diseases. In every instance of communicated morbid condition, there is material cause, however subtle its nature and mode of transmission, which must be concerned in its propagation. The power to communicate certain diseases is a material substance, in all probability made up of solid non-volatile particles, certainly not gaseous. Probably, then, it is a germinal cell, of which vaccine lymph may be taken as the type, of peculiar organization, capable of being transmitted from one locality to another, of preserving its vitality for a time at least, outside the organism, and within of reproducing itself.

We can imagine two ways in which poisons may act on the system.

1. When virus is introduced into the system, it multiplies rapidly, and seems to have the power of transforming healthy matter into matter of its own nature, as small pox.
2. By catalysis, a minute quantity of virus being sufficient to set up the septic changes in the blood to which it has gained access. Carefully conducted experiments by numerous observers have shown that the composition of the blood during disease undergoes alterations and variations. Purkinje says that the blood in cholera contains pure urea and an extractive substance by which the urea is rapidly converted into carbonate of ammonia. Diseases closely resembling those which occur naturally may be set up artificially, by introducing into the circulating fluid substances capable of acting catalytically. Abscesses have been produced by injecting pus into the veins of dogs, septic affec-

tions by the injection of putrid purulent matter into the veins, and diseases, with all the characters of typhoid fever, by the introduction of putrid blood into the circulation. It must be admitted that countless germs of vegetables, infusoria, &c., exist in the air, and grow and multiply whenever they find an appropriate nidus. This condition of the atmosphere has been called by Dr. Sanderson septic, and derives importance from the possibility of being concerned in the production of zymotic disease. That these low forms of life may seriously affect the blood of the higher order of animals is clearly proved by the recent researches of Davaine, who has furnished the first well-established example of a disease of the blood due to the presence of inferior beings. A low form of bacteria was discovered in the blood of sheep suffering from splenetic apoplexy, and considered by the observer to be the cause of that disease. Dr. Salisbury, of Ohio, states that the prevalence of measles in the Federal army arose from fungi (a *Penicillium*). He was led to this examination by observing that a large number of men rose one morning with symptoms of measles, after sleeping on straw which was mouldy, and had a peculiar odor, and that, by inoculation with this fungus, he set up in many persons, in from twenty-four to ninety-six hours, a disease closely resembling measles. It is nevertheless proper to state that these experiments have been repeated by Dr. Woodward, of the United States army, and that he does not confirm them.

Strong evidence has lately been brought forward to show that fungoid vegetations, if not the cause, are intimately associated with malarial fever (*Medical Times and Gazette*, November 9, 1867). Although it is true, as remarked by Dr. Snow in speaking of his opinion that cholera is disseminated by an especial cell, "that it is no objection to this view that the structure of the cholera poison can not be recognized by the microscope, for the matter of small-pox and chancre can only be recognized by their effects, and not by their physical properties," yet special poisons have in many cases been isolated. Dr. Richardson has separated the poison of pyæmia; it may, he says, be evaporated to the form of syrup or extract. It produces when dried a sub-

stance closely resembling the snake poison. It admits of being pulverized, and when it is introduced into the wound of a healthy animal produces precisely the same symptoms as those of the patient from which the poison was taken. Panum's experiments on putrid infection are of high interest, but he will not attempt to decide whether the putrid poison acts "directly on the system, or as a ferment to the blood." All the phenomena of disease would indicate that blood-poisoning is the result, and, as Dr. Richardson says, "that each particle of any one of these poisons, brought into contact either with the blood of the living animal or with certain secretions of the living animal, possesses the property of turning the albuminous part of that same blood or secretion into substance like itself." Dr. Halford made some experiments on the poison of the cobra. He states that when a person is actually bitten by that animal, molecules of living germinal matter are thrown into the blood, which speedily grow into cells and as rapidly multiply, so that in a few hours millions upon millions are produced. Do their number render the blood unfit to support life, or, with some analogy to a process of fermentation, do they impoverish the blood by growing at the expense of some element of it, and at the same time excrete a something, a poison to which the symptoms of the disease may be directly due?

If, then, it be true that the presence of organic matter or the products of its decomposition are important elements in the causation of disease, the question arises—Is it within our power to remove those causes, or to diminish or to prevent their injurious effects? The organic contaminations found in the atmosphere possess, for the most part, a more or less complex constitution analogous to that of organic matter in general, and, being of an oxidisable nature, are therefore extremely disposed to enter into combination with active oxygen, and form with that substance new arrangements with their elements, of a permanent character. And, again, from the little stability of composition of contagious poisons, evinced by the fact of their decomposition at about 212° , it appears that their constituents are weakly held together. Here, then, one method is opened to us

by which their action may be limited, by rapidly hastening their decay by a process of oxidation; or on the other hand, some substance may be employed which prevents the compound from changing its original composition. In this manner two classes of disinfectants are obtained: 1. Oxidising disinfectants, which hasten the decomposition of the compound, and at the same time render the resulting products harmless by reducing them to their simplest forms. 2. Antiseptics or colytics, which place the matter in a state unfavorable for its destruction by oxidation or otherwise. To the preceding classes another division may be practically added, to which the term fixative has been applied—such as Burnett's fluid, &c., which entering into combination with the offensive volatile products, prevents the pollution of the air by their escape.—*Medical Times and Gaz.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

MICROSCOPIC EXAMINATIONS OF BLOOD AND VEGETATIONS FOUND IN VARIOLA, VACCINA AND TYPHOID FEVER. By J. H. SALISBURY, M. D., of Cleveland, Ohio. Published by Moorhead, Bond & Co. New York. 1886.

We have received much pleasure and profit from the perusal of the above work. Prof. Salisbury, in the first chapter, says:

"It has been over eight years since I commenced the microscopic examination of blood, with the view of arriving at positive pathological conditions, etc., in this fluid in disease. These examinations have been conducted with great care and patience; being often repeated at short intervals in the same case, in order to watch the successive changes brought about by treatment, and to confirm previous observations.

"In this work of labor I have already made over thirty-five thousand individual examinations. In all the more important of these I have made careful drawings of the abnormal appearances and bodies present, and noted minutely the pathological conditions, and the attendant symptoms and lesions."

The present work is the detail of the results of his inquiries in the special diseases mentioned above, and from his long experience and known ability as an observer, will be recognized as a standard on the subject. All who have paid the least attention to the value of the microscope as an aid in diagnosis in disease, will be benefited by Prof. Salisbury's book, while to the

general professional reader it will unfold a fund of information, both useful and interesting.

Prof. Salisbury will please accept our thanks for the complimentary copy sent us.

THE ANATOMY AND HISTOLOGY OF THE HUMAN EYE. By A. Metz, M. D., Professor of Ophthalmology in Charity Hospital Medical College, Cleveland, Ohio. Published at the office of the Philadelphia Medical and Surgical Reporter. 1888.

We are glad to have the opportunity of recommending this really valuable little monograph to the profession. It comprises all the detail and completeness required as a text book on the anatomy and histology of the human eye, a want long felt. It is elegantly illustrated with engravings, and in every respect complete and well written. We would earnestly recommend it to medical students as a college text book and aid in studying the minute anatomy of the eye; for to understand the diseases and treatment, especially surgical, of this important organ, such knowledge is indispensably necessary, and has heretofore been much neglected by students.

Prof. Metz deserves great credit for the able manner he has treated his subject, and the publishers have done full justice to his text by the style and appearance of the book.

We understand from a private letter from Dr. Butler that they are prepared to publish works for authors at the office of the *Medical and Surgical Reporter*; and, judging from the above, we can freely recommend our western authors to them, fully satisfied that ample justice will be done, and their works favorably placed before the profession.

BRAITHWAITE'S RETROSPECT OF PRACTICAL MEDICINES AND SURGERY. July, 1888. W. A. Townsend & Adams: New York. \$2 50 per annum.

This excellent compendium is at hand, filled with the usual amount of interesting selections from the European press. It should be in the hands of all physicians who wish to keep up with the rapid advances of their profession.

THE QUARTERLY JOURNAL OF PSYCHOLOGICAL MEDICINE AND MEDICAL JURISPRUDENCE. Edited by W. A. Hammond, M. D. July, 1888. New York: D. Appleton & Co. \$5 per annum.

This useful Quarterly has passed into the hands of Messrs. D. Appleton & Co. The present number is replete with matter useful to both physician and lawyer. It is the only work devoted to medical jurisprudence now published. The article of "The Formation of the Mixed Races" is worth the year's subscription.

THE HALF YEARLY ABSTRACT OF THE MEDICAL SCIENCES. July, 1868.
Henry C. Lea: Philadelphia. \$2 50 per annum.

This is a digest of British and Continental medicine, and of the progress of medicine and collateral sciences throughout the world for the last six months. A most valuable work, comprising the most valuable of the great mass of medical literature, and condensed into a practical and useful form, and easily referred to in case of need.

HALF YEARLY COMPENDIUM OF MEDICAL SCIENCES. Part II. July, 1868.
Philadelphia. Published by S. W. Butler, M. D., at the office of the Medical and Surgical Reporter. \$3 per annum.

This is eminently an American work, and deserves the patronage of every professional man in the United States. It contains a well selected digest of the current American and foreign medical journal literature for the past six months.

This number will be found to be an improvement on its predecessor. It contains about four hundred and twenty separate articles, from the pens of one hundred and ninety-one American and two hundred and twelve foreign authors. This fact of itself attests the value of the work.

We owe Dr. Butler much for his energy in thus placing in a compact form so great an amount of useful matter. We earnestly recommend the work to our readers, and trust the publisher will be sufficiently sustained to continue the Compendium as a permanent work.

M E D I C A L R E P O R T E R .

ST. LOUIS, SEPTEMBER 1, 1868.

The Craig Microscope.—We have received from Mr. George Mead, of Racine, Wis., one of these very excellent, yet simple, instruments. For any ordinary examination they answer all the purposes of a more expensive microscope; and for the student, is just the thing for every-day use. It is readily adjusted, and magnifies sufficient for all ordinary purposes. It renders the blood, pus, and milk globules, and cancer cells, as well as the animalculæ of stagnant water, distinctly visible; shows the tubular structure of the hair, the circulation of the blood in the web of a frog's foot, and opens up the minutiae of

creation to the view of the astonished beholder, "where the unassisted sight no beauty sees." It furnishes an endless source of home amusement and instruction to every one, especially to the young.

All proper objects can be used without their being mounted, simply by placing them on a glass slide, or, if liquids, on the under surface of the lens; but as mounted objects are very convenient, and always ready for use, and as inquiries have frequently been made for them, the proprietor is having several dozen from among the most interesting and beautiful objects neatly mounted and boxed.

It magnifies about 100 diameters or 10,000 times, and, owing to its simplicity, it is invaluable for physicians, scientific men, students and schools, and for every one who is a lover of the beautiful things of nature, for it opens up an unseen kingdom to the view of the inquiring mind. It is amusing, instructive and useful.

Each microscope is put up in a neat box, with full directions for using it carefully pasted on the box. The price, put up in a box, and sent by mail, is only \$2 75. The mounted objects are furnished at \$1 50 per dozen. We advise our friends who are curious as to the hidden mysteries of nature's works to procure one of these instruments.

We shall in our next allude to another microscope for the use of students for the examination of insects, flowers, &c.

For further information apply to Mr. George Mead, Racine, Wisconsin.

D. Appleton & Co., Publishers, New York City, we see, have assumed the publication of the *New York Medical Journal* and the *Psychological Journal*, formerly published by Moorhead, Bond & Co. The editors remain the same as before. Under the management of this enterprising house we predict for both journals more than ordinary success.

We have not received the *Medical Gazette* nor the *Obstetric Journal* of late. Have they suspended? We hope not, as both were valuable additions to our medical literature.

T H E

St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

J. S. B. ALLEYNE, M. D., AND J. F. POTTER, M. D.

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No. 14.

OVARIOTOMY—A SUCCESSFUL OPERATION.

By JOHN T. HODGEN, M. D., Professor of Anatomy, &c., in St. Louis Medical College.

In writing this case I will omit much of the original notes, as these, in their detail, would be unprofitable, as well as tedious.

Mrs. P——, aged 27, had enjoyed uniform good health; was married at twenty-three, and is now (March 1, 1868,) the mother of two healthy children, the youngest but 26 months old. In June, 1867, she observed a swelling in the left side of the lower part of the abdomen, about the size of an orange. It was painful at times. I first saw Mrs. P——, with Dr. A. S. Barnes, in September, 1867. She was as large as a woman at the sixth month. From this time the tumor became more painful, and the abdomen sensitive to the touch, and the tumor grew rapidly.

March 18, 1868, the abdomen was enormously enlarged, breathing was difficult, and pain agonizing. On this day I introduced a trocar, and drew off three gallons of dark, coffee-colored, albuminous fluid; and now we learned, as had before been suspected, that the original cyst, on the left side, was not that which had so rapidly enlarged, for now this cyst could be distinctly felt. From the date of tapping Mrs. P—— was much more comfortable; but the cyst began immediately to fill rapidly, so that by the 28th of May, two months and ten days from

tapping, she was as large and uncomfortable as before it, though the general health was much improved.

On the 28th of May, at 11 A. M., assisted by Drs. A. S. Barnes, J. J. McDowell, Gregory, Prewitt, O'Reilly, Leavy, Maugh, Shumard, M. A. Pallen, Keukelhane, J. F. Johnson, Outten-Alleyne and Smith, with the patient fully anæsthetized, an incision, four and one-half inches long, was made in the linea alba, beginning one inch below the umbilicus, and passing toward the pubis. The abdomen being well supported by Drs. Pallen and Smith, the tumor made its appearance in the cut, and was punctured by a trocar, with tube attached, and ten quarts of dark-colored albuminous fluid was drawn off. I now found a considerable number of recent feeble adhesions between the omentum and tumor; these were broken up. A second cyst was punctured, containing a very thick, gelatinous fluid, and the tumor turned out. It was found adherent only by the pedicle (a small one) to left side. The pedicle was secured near the cyst by a wire of annealed iron, applied by Maissonnerve's apparatus for metallic ligature, and fixed by a slide with a thumb screw. The tumor was now detached by cutting through a part of the cyst. The pedicle was held in the lower part of the wound until the incision was closed by eight points of silver wire suture, the lowest one passing closely around the pedicle (below the iron wire securing it), not through it, thus securing it. A piece of lint, wet with per-sulphate of iron, was placed on the projecting portion of the pedicle. The remaining part of the closed cut was covered by a strip of linen, anointed by simple cerate. The abdomen was well padded with cotton, and a most admirable abdominal bandage, furnished me by my friend, Dr. J. O. Hamilton, of Jerseyville, Illinois, applied, supporting the parts well.

The patient was left on the lounge on which the operation had been performed, the clothing having been protected by India rubber cloth lying over the body, and under a piece of sheet India rubber connected to the abdomen, so that no fluid could soil the patient's clothing. The abdominal walls had been so well supported by the hands of Drs. Smith and Pallen that not a drop of fluid passed into the abdominal cavity.

Dr. O'Reilly, who kept the pulse, informed me that it varied very little in strength, and in frequency from 85 to 94, during the twenty-three minutes the patient was under chloroform. Just as the dressing was completed the patient vomited, and the stomach remained irritable.

The tumor was found to consist of one large cyst, with a great number of smaller ones projecting from its inner surface, and, beside the fluid discharged, weighed five pounds, making in all twenty-five pounds.

At 4 P. M. pulse was good, 95 per minute; had slept a little; had taken 60 grs. of bromide of potassium; nausea continued.

May 29, 8 A. M., pulse 100, soft; abdomen tender to touch, slightly tumid; vomiting continues; bromide of potassium discontinued, as it appeared to have increased the nausea; had slept several times, half an hour at a time. 6 P. M., pulse 120, soft and full; continues to vomit; tympanitis more marked; removed catheter from bladder, the patient complaining of the irritation; had taken a little bicarb. soda, also sub nit. bismuth, with cinnamon water. To 1st of June continued much the same.

June 1, pulse 110; has not vomited since last night. 6 P. M., has had a comfortable day; has taken a little tea and toast.

June 2, clasp of pedicle has separated; removed it; complains of burning along the track of cut.

June 3, renewed the dressings; found parts well together; a little dark discharge from lower part of wound.

June 6, is still improving; takes food; pulse 106.

June 7, abdomen distended and painful. Gave Hoff's Anodyne and McMunn's Elixir, with injection of lac assafoetida per rectum. 6 P. M., distention greater; is suffering much; passed rectum tube with the hope of discharging gas. On examining, per vagina, found a tumor behind the passage, per anum it is in front, occupying the space between the vagina and rectum; cannot determine its character; is quite firm.

June 8, tympanites continues; some gas has passed.

June 9, bowels have been opened several times; little gas passed; tympanites continues; interferes with respiration; pulse 140; ordered an emulsion of castor oil and turpentine.

June 10, 8 A. M., has taken some food ; distention continues, but not so great ; pulse 120. 5½ P. M., was called suddenly ; at 8 o'clock she felt a discharge from lower part of wound ; found patient comfortable ; on examination found a quantity of pus had discharged from lower part of wound ; gas passing per anum freely ; on examining, per vagina, found tumor much softer, and higher up in pelvis. Put a drainage tube in wound.

June 11, patient comfortable ; has a good appetite ; bandage is so loose that it is taken up four inches ; patient wishes to sit up ; pulse 100. 12th., good appetite ; pulse 100 ; comfortable ; continued steadily to improve. On the 17th had a free discharge of pus from vagina. On the 25th the abdominal wound was entirely healed ; discharge from vagina ceased, and patient going about house.

The unpleasant symptoms that arose in this case were certainly due to the accumulation of pus within the pedicle pressing on the rectum, and preventing the discharge of gas ; and to the fortunate pointing of the abscess at the wound we owe her recovery.

To Dr. A. S. Barnes I owe much for his close attention during treatment after the operation, he having shared the responsibility and anxiety with me.

TO MAKE LINEN FIRE-PROOF.—A quantity of phosphoric acid lime is dissolved in water ; to this a little ammonia is added, and the whole filtered and discolored with animal carbon. It is then put on the fire and left to evaporate until it is concentrated, when gelatine and five per cent. silicic acid is added, and again reduced by evaporation to a crystalline substance, which is dried and pulverized. This powder is called "Hottina," from the name of the inventor. The cloth to be made fire-proof is dipped in a solution made of thirty per cent. of the above powder, thirty-five per cent. of gum, and thirty-five per cent. of starch. The cloth, when dry, will be perfectly fire-proof, and preserve its color.—*Exchange*.

ON SLIPPERY ELM BOUGIES AS PORT-CAUSTICS IN THE TREATMENT OF SPERMATORRHOEA.

By W. A. BYRD, M. D., of Lima, Illinois.

Surgeons living in country places, remote from the instrument maker, have to resort to some very novel devices to fill the place of these artificers and their highly finished wares.

About the first of March, 1867, I was consulted by a gentleman in regard to his health. Upon inquiry I found that he had in early life been so addicted to the pleasures afforded by *ladies* of easy virtue, that at the age of thirty-five he found himself, on account of impotency, unable to marry, as he wished to.

When placed amid the most voluptuous scenes he would sometimes experience no passionate feelings whatever; at other times he would have a partial erection, followed by an involuntary emission of semen. Nearly every night he would awake finding himself polluted by his discharges, and bathed in perspiration.

This state of affairs continuing, gave him a very melancholy appearance; his face being wan and haggard, and his eyes looking dim and lustreless; in fact, his whole physique presented but a shadow of his former self.

I believed that there was an undue excitement of the membranous portion of the urethra, in the vicinity of the prostate glands, that could be best overcome by the application of nitrate of silver locally, with constitutional remedies to build up the shattered system. The question then arose in my mind of how best to make the application. I had neither Gross' nor Lallomand's port caustic, and had no means of sending to an instrument maker for one. I did not wish to spoil my only catheter by cutting off the end so as to apply the caustic by insufflation, and I could get no cacao butter to form soluble bougies of. Injections had been tried, and found wanting. At length I conceived the idea that slippery elm bougies would fill the indication. I accordingly got some, and moulded them into the size and shape I required. These I placed with about two inches and a

half of their vesical ends into a solution of nitrate of silver, of the strength of 3j to 3j. After allowing them to remain in the solution about three hours, I took them out and dried them, when they were ready for use. Slightly moistening one of the bougies, I gently passed it up the urethra, after the manner of introducing a catheter. Letting it remain for half an hour, I then withdrew it, finding it considerably swollen, and the nitrate of silver pretty well soaked out of it.

The use of the bougie was followed by a frequent desire to urinate, with scalding sensations with the passage of the urine; there was also a sero-sanguinolent discharge, with considerable constitutional excitement. These symptoms lasted three or four days, when they passed off, leaving the patient somewhat better. Waiting some three or four days after the subsidence of these symptoms, I made another application of the bougie, and continued the same mode of treatment for two months, at the expiration of which time I considered him far enough advanced toward recovery to admit of leaving off the bougies. For collateral treatment he was placed upon a hard mattress, with light covering, to keep down any venereal excitement that might arise from overheating; for a tonic, with a special tendency to the urinary organs, he was ordered pills of strychnia, carb. iron and cantharides. Being slightly dyspeptic, he was put on wine of rhubarb and pepsin to correct the gastric derangement.

I saw him a few days since, when he told me that he felt as well as he ever did, and that the day was not distant when he would enter the married state. Charging him not to forget the lesson he had learned from the past, I left him, I hope, a healthier and a better man.

J. C. applied for relief for nocturnal emissions, May 20, 1867. I ordered him to have such bedding as would keep him cool, and ordered him to take tinc. capsicum, tinc. ferri chloridum and tinc. cantharides, each equal parts, of this mixture twenty drops three times a day. Trying injections in this case with some hope, as it was a much milder case, and failing, after

changing materials and quantities until I became satisfied that they were useless, I then tried the medicated elm bougies, as in the former case, with the happiest results, the patient getting well under six weeks' treatment.

Medicated bougies are by no means new to the surgeon, neither are bougies made of elm bark, but I do not at present recollect having either read or heard of them having been used in exactly the same manner as I used them in the preceding cases. Bougies have heretofore been medicated by smearing them with an ointment made of lard and the material intended for the local application. The objection to their use is obvious. As they pass down the urethral canal the ointment will be rubbed off against the walls of the outer part of the urethra, so that when it reaches the diseased portion of the canal there is only such action produced as would have been had the instrument not been medicated.

By using the elm bougie, soaked in a medicated solution, we get the instrument fully impregnated with the active principles we wish, on account of the mucilaginous substances that occupy the interstices between the woody fibres of the bark. When dried of course the salts will be retained until redissolved by the secretions of the urethra. As a general thing I believe I should prefer a Gross or Lallemand port-caustic, but there are cases even where the bougie may be the superior instrument. As the bougies become dampened by the secretions, they swell and drive part of the dissolved medicine into every lacunal or crypt of the canal.

These remarks are offered to the profession in the hope that they may strike the eye of some one whose lot may be cast in some place far removed from the notice and haunts of civilization, but still not so far away as not to meet those who may be benefited by his skill. These few words may assist him in being partially his own instrument maker. Again, there may be those within the crowded limits of a city who may think well of the treatment, and be successful.

ORTHOPÆDIC APPARATUS AND DESCRIPTION OF THE MECHANICAL APPLIANCES EMPLOYED IN THE TREATMENT OF DEFORMITIES AND DEFICIENCIES OF THE BODY, WITH DIRECTIONS FOR TAKING MEASUREMENTS FOR THEIR APPLICATION.

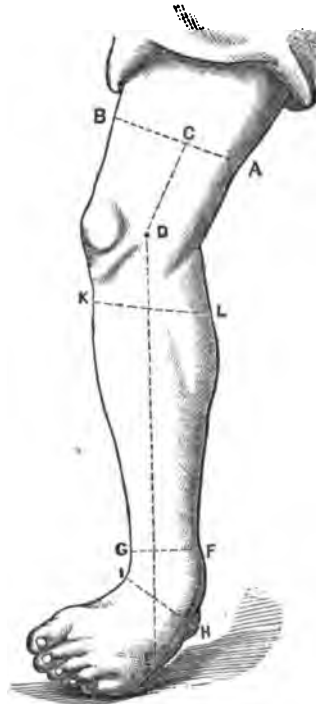
By D. W. KOLBE, Manufacturer of Surgical Instruments and Mechanist to the Philadelphia Orthopædic Hospital.

APPARATUS FOR CLUB-FOOT (*Talipes varus, valgus and equinus*).

Fig. 57.

Guide for Measurements.

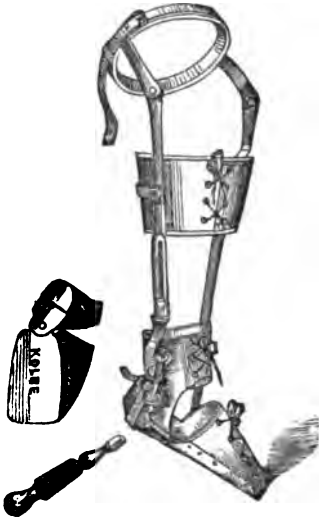
- B A—Circumference at the middle of thigh.
- K L—Circumference below the knee.
- G F—Circumference above the ankle.
- I H—Circumference over instep and heel.
- C D—Length from middle of thigh to centre of knee-joint.
- D E—Length from centre of knee-joint to sole of foot.



To give a correct idea of the deformity, place the foot on a sheet of paper and draw a line around it, to obtain its contour. It will be found in children from two years of age upwards, who have been unsuccessfully treated, that, for want of support from the heel, the muscular power of the knee has been impaired, causing the knee to bend backward and inward. This fact should be mentioned in ordering, as the apparatus can be constructed to remedy this defect.

State age and sex of patient; also whether tenotomy has been resorted to.

Fig. 58.



Kolbe's apparatus for club-foot.

Fig. 59.



Kolbe's apparatus for club-foot, used in after treatment.

The construction of this apparatus combines all the movements requisite in the correction of *Talipes varus, valgus*, and *equinus*, either in connection with tenotomy, or, if properly applied, without it. In children from a few weeks to one year of age, the apparatus will effect a cure simply by mechanical treatment. It may be proper to state that while this apparatus (commonly called club-foot shoe) combines the above-mentioned movements, it also possesses the great advantage of allowing the patient to walk about shortly after the operation; at least, as soon as the signs of inflammation have subsided. It thus not only relieves the patient from being compelled to lie down, but it greatly facilitates the process of bringing the foot in its normal position. This important point has hitherto been entirely overlooked by all other mechanicians.

The above apparatus is recommended by Prof. Smith, of the University of Pennsylvania, and Prof. Gross, of the Jefferson

Medical College, in their works on surgery, and by Dr. Wales, U. S. N., in his "Mechanical Therapeutics."

After having successfully overcome the deformity of the foot, either by operation or mechanical treatment alone, the result depends entirely upon the long continuation of a proper support. This after treatment is accomplished by the simpler apparatus shown in Fig. 59. Its construction is such that it will confine the foot in the natural position, while admitting of free motion in walking. It also possesses the great merit of being less liable to get out of order, consequently diminishing expense. It may be readily understood that, owing to the necessity of the more complicated adjustments in the shoe represented in Fig. 58, its durability can not be the same as that of the above apparatus. There is no necessity in every case to carry the side bars above the knee; consequently, in ordering it, state whether the knee is deflected, as remarked at Fig. 57, for measurements.

CALCANEAL CLUB-FOOT.

Fig. 60.



Fig. 61.



Application of Kolbe's apparatus for *Talipes calcaneus*.

Guide for Measurements.—Circumference above the knee and below the knee. Length from middle of thigh to centre of knee, from centre of knee to sole of foot.

In taking the measurements of the foot, let it rest lightly on a sheet of paper, and draw a line around it. Take the circumference immediately above the ankle, around the heel and instep, over the instep, and around the toes.

State age and sex of the patient.

This apparatus resembles somewhat the one described at Fig. 59, and used in the after treatment for *Talipes varus, valgus*, and *equinus*. It differs in possessing spiral or India-rubber springs attached between two circular arms stretching across from one lateral bar to the other, one above and the other below the centre of the ankle-joint. By the action of these springs the elongation of the tendo Achillis is effected. The sole of the shoe is provided with a steel plate sufficiently strong to maintain the normal position of the plantar arch.

Prof. Gross has described this apparatus in the last edition of his work on surgery, and Dr. Wales in his work on "Mechanical Therapeutics."

APPARATUS FOR THE ANKLE.

Fig. 62.



Measurements.—Circumference immediately below the knee.

Length from centre of knee to sole of foot.

Mention to which side the foot is inclined.

The measure of the foot should be given as directed at Fig. 41.

Kolbe's apparatus for weak ankles.

The construction of the above apparatus is similar to that of the appliances already described. It is an excellent support in sprains, and in dislocation of long standing, where the deformity is very marked. A plaster cast of the foot will be of advantage in making the apparatus.

Fig. 63.



In measuring for Fig. 63, give the circumference of limb below the knee, at the calf and ankle, around the heel, over the instep, at the toes, and length of foot.

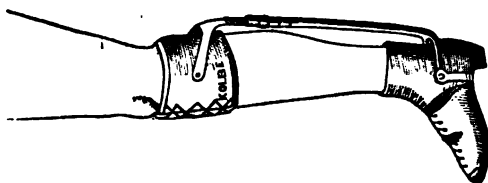
State whether the splint is to be applied to the inner or outer side; also whether for right or left leg.

The above is an illustration of a wire splint useful in the treatment of dislocations and sprains of the ankle-joint. It forms also a light and easy splint for the treatment of fractures of the leg.

Fig. 64 shows Boisnot's apparatus for dislocation of the ankle-joint, resections, &c. This apparatus explains itself, and is applicable where a continuous line of support is desired from below the knee. Exercise may be taken, and dressings applied without removal of the instrument.

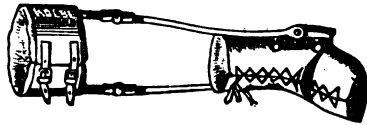
Fig. 65 represents my extension apparatus for dislocations of the ankle joint. The apparatus is similar in construction to that shown in Fig. 62 for weak ankle, with the addition of two extension screws connected with the lateral stems, and also a regulating screw at the ankle-joint, by which talipes is prevented.

Fig. 64.



Boisnot's extension apparatus for dislocation of the ankle-joint, resections, &c.

Fig. 65.



Kolbe's extension apparatus for dislocations of the ankle-joint.

(For measurements for these appliances, see Fig. 62).

APPARATUS FOR PARALYSIS.

Fig. 66.

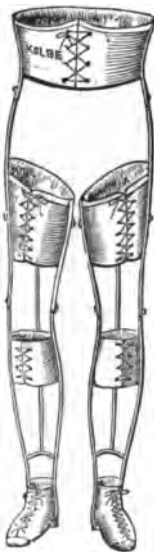


Fig. 67.



Guide for Measurements.—Length from sole of foot to centre of knee; length from centre of knee-joint to hip; length from hip-joint to under the arm; circumference below the knee; circumference above the knee; circumference of middle of thigh; circumference around the waist; circumference under the arm, if requisite. Measure for the shoe as directed at Fig. 41. State the age and sex of patient.

Fig. 66 represents my apparatus for paralysis of both limbs. It consists of lateral leg-stems, carried on the inner side as high as the perineum; on the outer, to the pelvic band, or to the armpit, as the case may require. Joints are placed at the hip, knee and ankle, and are secured to the body by the pelvic, thigh and leg bands. If the patient has not sufficient strength to maintain

the erect position, the apparatus is provided with a contrivance to lock the knee, and, if necessary, also the hip-joint. In some cases it is preferable to attach elastic straps to the back of the pelvic band, running downward over the posterior surface of the thigh to the back part of the thigh band, which will give the hip-joint an artificial muscular extension to hold the patient in an erect position, while it will allow a more free motion in walking. When the patient is lying down, the joints may be relaxed or unlocked, to permit free flexion.

Fig. 67 represents my apparatus for paralysis of one limb. Its construction is the same as that shown in Fig. 66.

Fig. 68.

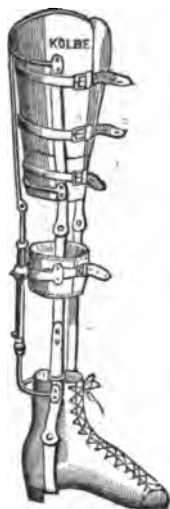


Fig. 69.



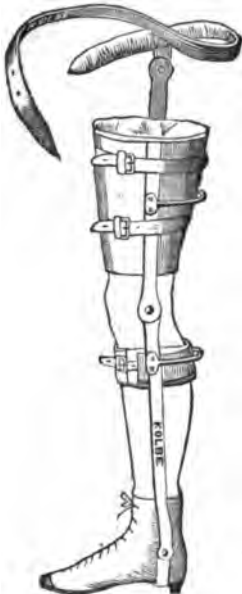
Guide for Measurements.—Length from sole of foot to centre of knee; length from centre of knee to hip; circumference below the knee; circumference above the knee; circumference of middle of thigh. Measure for shoe as directed at Fig. 41.

Figs. 68 and 69 illustrate my apparatus with spring joints, by which the patient is enabled to flex the knee in walking; the deficiency of the muscular power being supplied by the elasticity of the joints. Either of the above is principally applicable

in cases where the control of the knee and ankle is impaired. It is necessary to state whether the limb is inclined outward. The sex and age of the patient should also be stated.

APPARATUS FOR UNUNITED FRACTURE.

Fig. 70.



Fracture above the knee.

Fig. 71.



Fracture below the knee.

(For measurements see Fig. 32).

Figs. 70 and 71 exhibit the apparatus of Prof. H. H. Smith, of the University of Pennsylvania, for the treatment of ununited fracture.

A similar apparatus is also an excellent support in resections of the thigh and leg. It can be arranged to exert extension and counter-extension, if needed, without interfering with the movements of the limb.

ELASTIC STOCKINGS.

A combination of vulcanized rubber, webbing, silk or cotton, used in the treatment of varicose veins, ulcers and swelling of the legs. In measuring for stockings for the entire leg, give the circumference at the points shown in the illustration. For parts of the leg, as follows :

Ankle Stocking—Circumferences from T up to E.

Leg Stocking—Circumferences from T up to C.

Stocking for above the Knee—Circumferences from T up to A.

For the Knee-Cap (only)—Circumferences from C up to A.

In all cases the length should be given from the sole of the foot to the point to which the stocking is to extend.

Fig. 72.

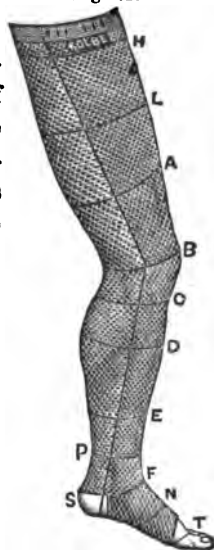
**APPARATUS FOR SHORTENED LIMBS.**

Fig. 73.

*Guide for Measurements.*

Circumference above knee.

“ below knee.

“ around ankle.

“ around instep.

Length from patella to sole of foot.

The difference in length between sound and defective limb.

Place the foot on a sheet of paper and draw a line around it, to obtain its contour.

State age and sex of patient.

Fig. 73 illustrates my apparatus to supply the deficiency of a shortened limb, caused by hip-joint disease, resection, &c., and obviates the awkward appearance in walking by the use of a high cork shoe, which is more or less dangerous, in causing sprain of the ankle-joint. A boot or a laced shoe is worn over the natural and artificial foot, which conceals entirely the deformity. When the patient has sufficient control over his knee-joint, no support is needed above the knee.

APPARATUS FOR AMPUTATION THROUGH THE FOOT.

Fig. 74.

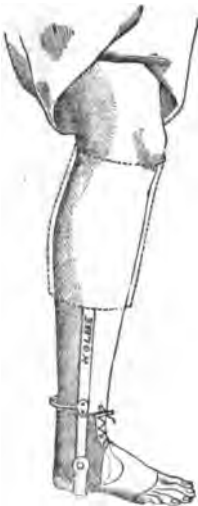


Fig. 75.



Guide for Measurements.—Length from lower edge of patella to end of stump. Circumference below knee.

A plaster cast extending a little above the ankle, showing the deformity, should be taken. Also, the length of the sound limb from the lower edge of the patella to the sole of the foot, and outline of the foot, should be given.

Fig. 74 illustrates my apparatus used after Syme's, Chopart's, Hey's and Pirogoff's operations. Fig. 75 shows its application. The perfection attained in the construction of this peculiar artificial substitute has overcome the numberless objections made against the above named operations. It as fully supplies the important necessity of comfort in locomotion, &c., as can be expected of any other artificial limb, when amputation is performed anterior to the insertion of the flexors of the foot.

KOLBE'S ARTIFICIAL LEG—DIRECTIONS FOR MEASURING.

1. In measuring, draw the tape moderately tight, and, to insure accuracy, measure twice at each point.

2. The limb should be bare, and the patient must stand

Fig. 76.

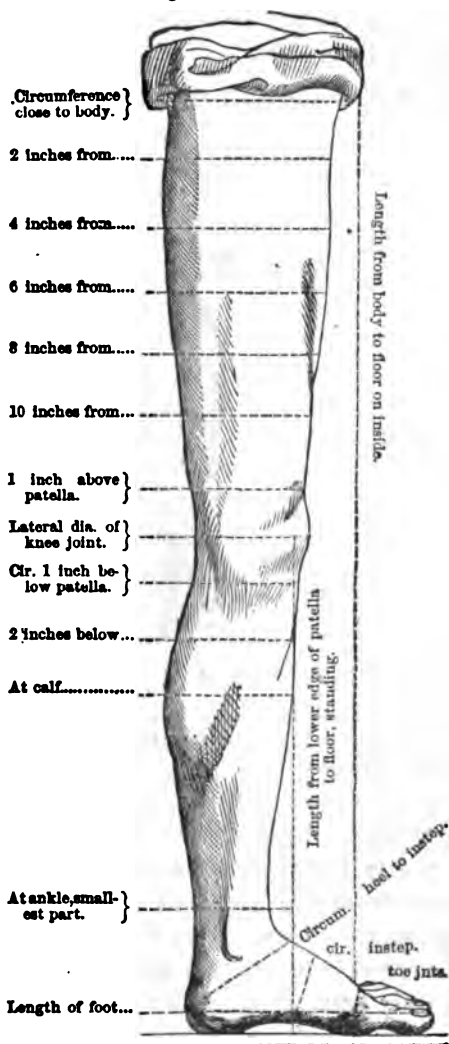
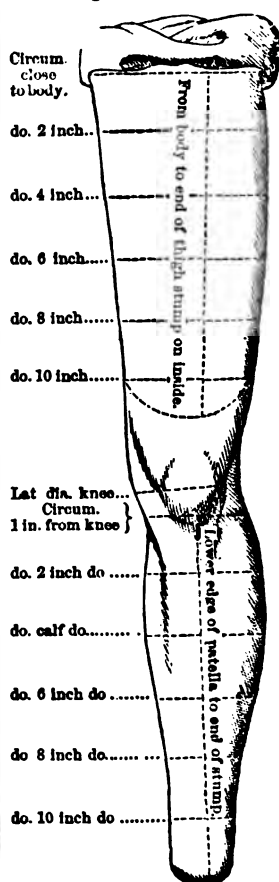


Fig. 77.



erect, with the hips level, while the measures in Fig. 76 are being taken.

8. The patient must be seated while those in Fig. 79 are taken, and bear no weight on the foot.

4. Let the foot rest lightly on a sheet of paper, and draw a pencil-mark around it, to obtain its contour.

Fig. 78.

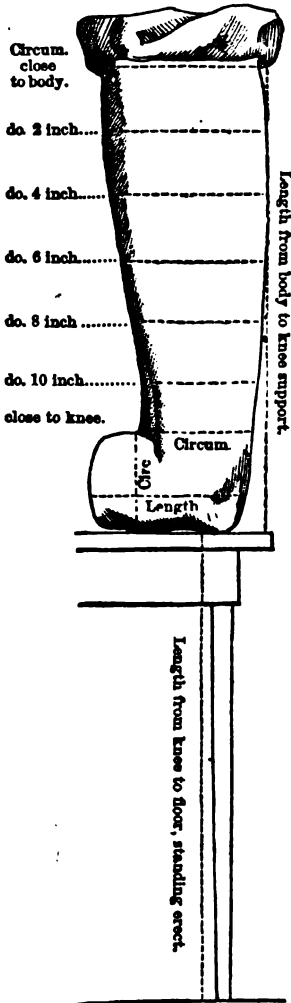
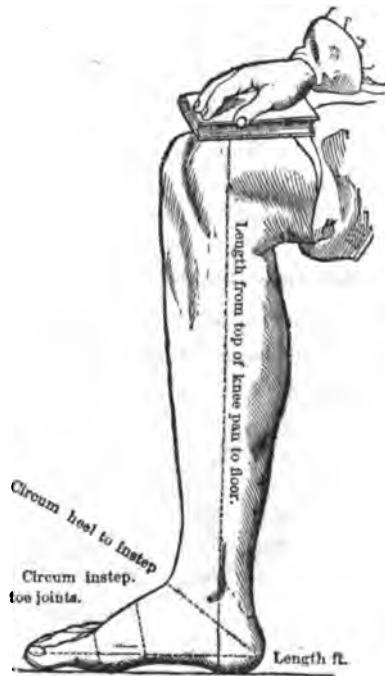


Fig. 79.



5. For amputation below the knee, when the patient can not visit the manufactory, it is desirable to have a plaster cast of the end of the stump to about six inches above the knee-joint.

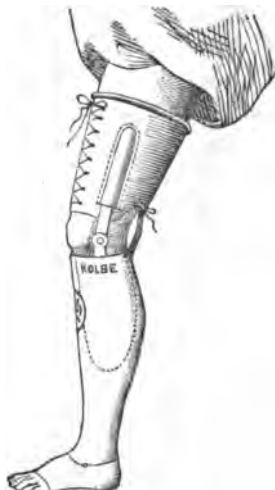
State age and sex of patient; which leg amputated; whether well healed and joint flexible; weight of the patient; occupation; and whether a false limb has been worn before.

Fig. 80.



Amputation above the knee.

Fig. 81.



Amputation below the knee.

I offer my artificial limbs, shown in Figs. 80 and 81, as the best automatic appliance yet invented for deficiency of the lower extremities.

Fig. 82.

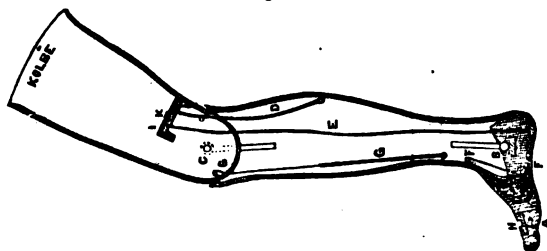


Fig. 82 shows a vertical section of the limb designed for an amputation of the thigh. As is usual, the framework is of

willow wood, which is selected for its tenacity, strength, fine grain and lightness. The thigh piece, or bucket, is commonly lined with washed leather, fitting the thigh accurately, and extending up to the ischium and perineum, which contain a part of the weight of the body; the balance being diffused over the outer surface of the thigh. Its walls are opened by oblong slits or fenestræ, which permit the proper amount of ventilation being effected, and, at the same time, allow the secretions of the part to escape.

The thigh piece is strongly articulated at the knee to the leg piece by a steel bolt, which admits antero-posterior motion only. From the inner surface of the lower third of the bucket a wooden pin, I K, projects, to which are attached two strong cords made of twisted linen thread. One of these, I E, being inserted into the heel, represents the tendo Achillis; it supports the weight of the body by preventing the foot being bent at any greater angle than a right angle. The other cord, K D, is inserted into the middle of the posterior surface of the leg, and is accessory to the former, an arrangement by which the limb is rendered so exceedingly strong that the weight of the heaviest man can not impair its stability. The cord marked G G is a spiral spring which is intended to give the leg a slight impulse forward in taking a step; it is the analogue of the quadriceps of the natural limb.

Fig. 83.

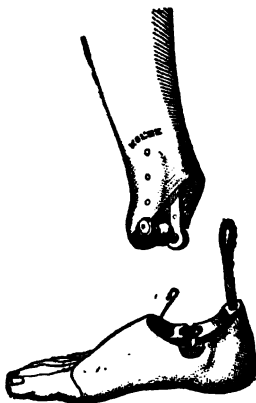


Fig. 84.



Fig. 83 shows the mechanism of the ankle-joint. It is somewhat peculiar, combining all the strength of a ginglymoid joint with lateral motion. The inferior surface of the leg and the corresponding surface of the foot are provided each with a hemispherical depression, which, when conjoined, form a hollow sphere; in the interior of this sphere the globular enlargement seated at the centre of the steel ankle-bolt works, the extremities of the bolt passing through the lateral metal straps in holes a little larger than their diameter; these extremities are sustained by two pieces of India-rubber, which permit that amount of lateral motion desirable in the ankle.

F F, in Fig. 82, indicate the position of a cord attached to a horizontal metallic spring fastened to the sole of the foot, and intended to bring the foot again to a rectangular position with the leg after it has been extended; it is the analogue of the *tibialis anticus*.

H A mark the metatarso-phalangeal joint; it is a simple tenon and mortise joint, firmly bolted together, and under the control of a metallic spring which brings the toes straight with the foot after they have been extended by the weight of the body. (Description condensed from Wales' "Mechanical Therapeutics.")

Fig. 84 represents a wooden pin, or "box-leg." It consists of a wooden frame widely grooved below, to accommodate the knee, and of two lateral side-pieces; the external, slightly curved backward, reaches from the knee to the crest of the ilium, and the internal half way up to the thigh. From the bottom of the socket a pin projects, and makes up the interval between the knee and the ground. (For measurements see Fig. 78).

PROLONGED GESTATION.—Dr. Rivers, of South Carolina, relates a case in which a hydrocephalic foetus remained in utero until the completion of the twelfth month. The mother was troubled with abdominal pains at term, but these subsided after three days.

MINERAL WATERS.

By CHARLES E. BUCKINGHAM, M. D.

We are frequently annoyed by the persistency of advertisers in thrusting before us notices of mineral waters, which will cure every known disease; and so frequently horrified by the statements of friends who wish them tried by patients; and so frequently amused by the certificates of professional brethren, who recommend them to the public, that I thought, that to look at them, and see what compose them, and how they do good, might be an advantage. Governors and mayors, merchants and clergymen, landlords and doctors, generals and congressmen, gamblers and loafers find their names affixed to the puffs of one or another distinguished spring. Chemists rejoice in the infinitesimal doses of *ides* and *ates* and *ites*, which they are enabled to see their names appended to on printed wrappers; and the various neighborhoods are proud of the cathartic, alterative, diuretic and antiscrofulous panaceas, which some famous or to-be-famous spring piddles out for the humbugged, who spend money and time for their benefit.

To keep the bowels open is the whole duty of some men, and if a disagreeable salt water will do it for half a dollar a quart, it is better than to do it with pills, at two cents apiece. It is not with them the change of air at Saratoga, nor the pleasant scenery and relaxation at Homburg, nor the pleasant company at Tunbridge or Leamington, nor the unwonted exercise and amusement at all these places. It is physic, and physic alone, they look to for relief, and nature's medicine ready prepared for them, by sulphur springs, they consider more advantageous than the same medicine, if they took it without the name blown into the black bottle from the nearest grocer or druggist. So it seems, if they take it when it comes from the spring; but the greatest benefit comes from the surroundings and the change, and from these alone. A couple of teaspoonfuls of Epsom or Glauber salts to a quart of water gives as much medicinal virtue as anything it contains, and more than most springs possess, aside from the change of air and scene, which those do not get who buy by the bottle. A quart of pure water, taken a half

hour before breakfast, will clear out the bowels or wash out the bladders of most men, within an hour after meals, quite as well as the stinking solutions, known as mineral waters, whether they are impregnated with Virginia brimstone or the drainings of some celebrated graveyard in Pennsylvania.

Let us look at the contents of the well known springs. The richest in salts of any mineral water, whose composition I have, is Cheltenham. The wine pint contains in solution 15 grains of Glauber's salt and 11 grains of Epsom salt. The remainder is principally table salt, to the amount of 50 grains. Common salt is the principal ingredient in almost all the celebrated waters. Take five of the Saratoga springs. The Iodine spring has 23.4 grains of common salt to the pint; the Pavilion spring a fraction of a grain more; the Union spring 80.4 grains; the Congress spring 19 grains; and the last, and of course the best, the famous Star spring, 47.3 grains. The other saline constituents are in amount so small that they are of little or no consequence, or else, like the iodides, may do as much mischief as good, by producing eruptions, which the patients would otherwise be free from, and which are no indications of previous disease, nor promises of future health.

Take the sulphuretted springs, of which the White Sulphur is a fair specimen. A wine gallon has the common salt, the Epsom salt, a bare trace of iron, and every pint is mixed with .8 of a cubic inch of sulphuretted hydrogen, which serves to flavor the expirations from one end of the body of its consumer, at least.

Now for the Chalybeates, those which have what I think Sam Weller called the flavor of warm flat-irons. Tunbridge has 0.275 of a grain of iron to the pint; Brighton, 1.1 grain; Cheltenham, 0.8 grain; Bedford, less than a grain and a half; Sharon, a little more than a quarter of a grain. When we come to the so-called carbonated waters, if we wish the benefit of these, it can all be had at any country tavern in New England, in a daily breakfast of saleratus biscuit.

Of course the profession do not want my advice. Perhaps the clergy, and governors and members of Congress do not.

It is, therefore, offered without asking. If your bowels are not open, and your food will not make them so, take a pint or more of *clean* water, thirty minutes before breakfast. If that does not answer the purpose, add to it a pinch of common salt, Epsom salt, or Glauber salt, which you can buy a pound of for a few cents. A run in the country among the hills will do the rest of the work (you may be sure it will do you no harm), and don't make yourself ridiculous by puffing medicines of whose good effects you know little, and whose bad effects you are not willing to be responsible for.—*Boston Med. and Surg. Journal.*

THE COMMENCEMENT OF OLD AGE.

What are the signs of natural decay? When does old age commence? The natural history of individual death, without disease, is one of the subjects which it remains for modern physicians to study. When does the vital machine begin to wear out in the typically healthy man, and what are the ways by which normal decay, inevitable death, invades the aged man? With our modern means of precise observation and minute pathological research, we should be able now to lay the foundation for the answer to this most important question. The subject is suggested to us by a most thoughtful, able and well-written thesis on death, considered from the etiological point of view, by Dr. Acosta, of Paris, which will repay the perusal of reflective men. Discussing the difficulty of determining the commencement of old age, Dr. Acosta reminds us that whilst the Greeks regarded the age of 49 (7 times 7, their climacteric number) as the culminating point of human strength, and at the same time as the commencement of decadence, M. Flourens holds that decadence does not commence until the seventieth year; an age which the Chinese, according to Sir John Bowring, regard as a metaphorical one, calling those who have attained to it *rare birds*, and men of ninety years old *loiterers*. The two climacteric ages of the Arabs were 63 and 81, being the multiplication of 9 (their magic number) by 7 and 9. The age

of 93 was considered so critical that it was called the *grand climacteric*, and the ancients were accustomed to mutually congratulate each other when they had passed it. Quetelet, to a certain extent, admits the danger of this critical period; for he says, "From 60 to 65 years of age, vitality loses much of its energy; that is to say, the probability of continuing to live diminishes greatly." M. Reveillé-Parise, while in common with some other physiologists allowing the existence of two sources of strength in the constitution, which he names *force in reserve* and *force in use*, believes that the physiological fact which reveals old age is the progressive diminution of reserved force so superabundant in youth. There certainly exist some organizations which are proof against the ravages of time and the attacks of sickness and death. Some men at the age of 80, 90, even 100 years, have preserved their sensorial and intellectual faculties, and great mental energy, even to the last days of their life. A complete list of them would be too long. We will, therefore, only mention a few names. Plato died at the age of 81, pen in hand. Gorgias continued his literary labors to the age of 107. Socrates wrote his famous *Panegyric of Athens* in his 94th year; Theophrastus his *Characters* at 99; Cato learned Greek after his 60th year; Cicero composed his charming work, *De Senectute*, one year before his violent death; Voltaire wrote a great number of tragedies, *Tancrede*, and *l'Orphelin de la Chine*, amongst others worthy of his best time, at the age of 65, and he came to Paris in his 84th year, to give himself an intellectual treat, the representation of his tragedy of *Irene*. There are also still living members of our profession, as well as the literary, scientific and political world, who would illustrate the list of Nestors, remarkable both for their longevity and for the intellectual labors to which they continue to devote themselves. D'Israeli has said, "Old age has been a thing unknown to many men of genius."—*British Medical Journal*.

A WORD FOR THE DOGS.

We take the following excellent suggestions, by Dr. Snow, from the *Providence Journal* :

We have no word in favor of keeping dogs in city or in country. They must be considered an expensive and useless, and, in most cases, a worse than useless luxury. They kill sheep in the country and propagate fleas in the city, and are nuisances generally. But dogs are kept, and will be kept, in spite of taxation, and contrary to good reason. If, then, they must be kept, let them be taxed, but let us abolish the useless, and, worse than useless, the cruel and barbarous restrictions that are now placed upon them by our laws.

Some thousands of years since, in the dark ages of Greek and Roman heathenism, there was a superstition that the position of the dog-star Sirius, in the hot months, produced an unfavorable effect upon dogs. The weather was hot, the dog-star appeared hot and raging; if the dog-star *rages*, there is danger that dogs will *rage* and run mad. Such was the ridiculous fancy. It was nothing but the fancy of a heathen poet, founded upon astrological and heathenish superstition, and yet, foolish as it was and is, it has influenced the minds of the people in all ages since it was written. Even in the year of our Lord 1868, some portions of the laws in our good city of Providence, and in all our intelligent country, have no reason whatever for their existence except this ancient foolish superstition.

The truth is, dogs do not have hydrophobia in the summer as much as in the winter months. This is established by facts. But every few days dogs are reported mad in our streets, and are killed as such. Why? Because in the excessive heat their mouths are nearly closed by their muzzles, so that they can not even breathe as dogs wish naturally to breathe. Dogs do not perspire, and it is a necessity of their nature that they should have a chance to open their mouths freely. They can get no water; they have no hydrophobia (fear of water); but would be glad to get water if they could. The result is, they become irritated in trying to rid themselves of their muzzles; their blood

is heated, they froth at the mouth, they have convulsions, the cry of "mad dog" is raised, and they are killed or die in convulsions.

The truth is, muzzles on dogs tend directly to produce convulsions and so-called madness. They are useless, they are cruel, they are wantonly barbarous. Who can blame the animals if they are mad when compelled to wear them? Animals who are not dumb would be mad if treated in this way.

It is supposed, and there seems to be good reason for the supposition, that the real cause of genuine hydrophobia is the disproportion of the sexes that exists in the dog family. Here again our laws, by an almost prohibitory tax on one class of dogs, are contrary to reason and common sense.

Let us abolish this inequality, abolish the muzzle, and we shall avoid serious cruelty to animals, and shall have no more, if as much, genuine hydrophobia as at present.

TWISTING ENDS OF ARTERIES.—The practice of twisting the divided ends of the arteries, instead of applying ligatures, has lately been tried by Professor Humphry after all his operations, in Addenbrooke's Hospital, Cambridge, and with good result. There has been no subsequent bleeding in any case; and the wounds have, he thinks, on the whole, healed better than they would have done with the ligatures. The popliteal is among the arteries which have been thus secured, and the femoral, in two instances, after amputation in the thigh.—*Lancet*.

ANECDOTE OF THE LATE M. RAYER.—M. Rayer was kind and affable, and very accessible, but that, together with the dignity suitable to the ministers of our art, and which he never allowed to be compromised before him and in his person. One day, at the table of a great financier, the amphitryon, wishing to give proof of his erudition, addressed him thus: "Is it not true, Doctor, that medicine was only practiced at Rome by freedmen?" "Yes," replied Rayer, "but that was the period when Mercury was the god of the thieves and the bankers."—*Ex*.

THE INFLUENCE OF ELASTICITY ON MUSCULAR CONTRACTION

In a paper presented to the French Academy of Sciences, M. Marey has endeavored to prove that muscular contraction is made up of a series of elementary movements which he calls *secousses*, each of which is produced by the appearance of a wave at the surface of the muscular fibres. This analysis of the muscular act led the author to look upon the elasticity of the muscles as taking the same part as that of the arterial vessels in the circulation of the blood. M. Marey has shown, moreover, that the elasticity of the arteries is advantageous as regards the work which the heart can do, that it diminishes the resistance which inertia and what is called the friction of the blood-current oppose to its impulse. The question was whether the elasticity of a muscle does not play the same part as regards work, and if it does not aid in the production of work by diminishing certain resistances.

The mechanical force developed by a muscle is produced at the moment when the muscular wave is formed; its duration can not then exceed four or five hundredths of a second in some species of animals. This also would be the duration of the movement which our muscles would tend to give by each of their *secousses* to the bodies which they are to move, if they were without elasticity and transmitted the movement which they produced without alteration of its character. Now, in these conditions of short duration of application, these forces would be almost entirely destroyed, on account of the inertia of the bodies to be moved, and, as active forces, would produce shocks instead of useful work. Let the same forces act on the same bodies through the intermediation of elastic transmission, the shock will disappear and work will be produced. By a very simple experiment the author shows that the same force of short duration produces a shock or work, according as it is transmitted by elastic media or not. Now if, in contraction of the muscles, the motor force is engendered under the form of shock, with jerking contractions of the muscular fibres, it must

be admitted that this force, transformed by the elasticity of the muscles into a uniform and prolonged traction, is then in a more favorable condition to produce mechanical work.—*Archives Generales.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

TRANSACTIONS OF THE INDIANA STATE MEDICAL SOCIETY, at its Eighteenth Annual Session, held at Indianapolis, May 19 and 20, 1888.

PROCEEDINGS OF THE SEVENTY-SIXTH ANNUAL CONVENTION OF THE CONNECTICUT MEDICAL SOCIETY, with Medical Communications, held at New Haven, May 27 and 28, 1888.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, at its Nineteenth Annual Session, held at Harrisburg, June, 1888.

We have received the above proceedings, and find them filled with much valuable matter. The reports in the Indiana proceedings on Diphtheria, by Dr. Hibbard, Cholera, by Dr. Sutton, and Diseases of Females, by Prof. Parvin, are each excellent papers. The section on surgery is also especially complete.

The Connecticut proceedings contain two valuable prize essays, by Prof. Robert Bartholow, on Army Hygiene, and Quinine and its Salts, both exhibiting profound research, and of universal interest. The article on Relation of Theory to Practice, by Dr. Carrington, on Treatment of Paralysis by Hypodermic Injection, by Dr. M. Gonzalez Echeverra, on Traumatic Lesions, by Dr. Coates, are all able and important papers.

The Pennsylvania proceedings contain many valuable medical papers. The one on Food for Infants, by Dr. Carson, and on Diagnosis, Positive and Differential, of Spinal Arthro Chondritis, by Dr. Benjamin Lee, are replete with valuable suggestions to the professional reader.

We congratulate the profession of each of the jurisdictions on the elegant and attractive appearance which their proceedings present, and the contents of each show a high order of professional attainment by the members of the societies.

LECTURES ON THE DIAGNOSIS AND TREATMENT OF FUNCTIONAL NERVOUS AFFECTIONS. By C. E. BROWN-SÉQUARD, M. D., F. R. S., etc. Part I. Physiological. Pathology and General Therapeutics of Functional Nervous Affections. Philadelphia: J. B. Lippincott & Co. 1888.

This pamphlet is the first of a series of lectures by Professor Brown-Séquard, and from his known large experience with, and successful treatment of, nervous disorders, can not fail to be a most valuable addition to medical literature on this important subject.

The Professor says: 'I intend in these lectures to give a practical history of the diagnosis and treatment of neurosis, founded upon clinical observation, enlightened by physiology and experimental pathology and therapeutics. The lectures will be grouped into three parts, each of which will form a complete work by itself. The present, the first part, relating to general remarks on the causes, diagnosis and treatment of neurosis; the second, to the history of each of the pure functional nervous affections; and the third, to vaso-motor and nutritive neurosis, and to functional nervous affections due to diseased conditions or alterations of the blood.'

The first part will soon be followed by the second and third, when we shall again notice the work.

DENTAL MATERIA MEDICA. Compiled by JAMES W. WHITE. Philadelphia: Samuel S. White. 1888.

This interesting little manual contains a full description of all the articles in the *Materia Medica* employed in the practice of dentistry, and is especially useful to dentists. All dental students should, as a matter of course, possess a copy. It can be obtained by addressing S. S. White, publisher of the *Dental Cosmos*, Philadelphia. We recommend it heartily to our dental friends.

The American Journal of Obstetrics and the *New York Medical Gazette* are now published by the well known publishing house of W. A. Townsend & Adams, New York. We are glad to see that they are to be permanently continued. The second number of the *Obstetric Journal* has just been received, and is filled with more than ordinary interesting matter. We earnestly commend it to our readers.

MEDICAL REPORTER.

ST. LOUIS, SEPTEMBER 15, 1868.

St. Louis College of Pharmacy.—The annual course of lectures in this institution will commence on Thursday, October 1, and continue on each Monday, Wednesday and Friday evenings thereafter until the first of March next. Ample facilities will be furnished for the practical illustration of *Materia Medica*, Botany, Pharmacy and Chemistry.

VITAL STATISTICS OF ST. LOUIS.

For the month of August, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	857	Still Born.....	35
White Females.....	802	Under five years of age.....	450
Colored Males.....	10	Between five and twenty years...	46
Colored Females.....	11	Between twenty and forty years...	90
Born in the United States.....	550	Between forty and sixty years....	66
Born in Germany.....	84	Between sixty and eighty years...	25
Born in Ireland.....	61	Bet. eighty and one hundred y'rs	3
Born in other countries.....	20	Total.....	715

DISEASES.

Apoplexy.....	8	Fever Puerperal.....	1
Albuminuria.....	2	Fever Continued.....	10
Atrophy.....	12	Fever Typhoid.....	13
Asthma.....	1	Gangrena.....	5
Bronchitis.....	8	Gastritis.....	5
Burns.....	1	Hepatitis.....	5
Cancer.....	2	Hydrocephalus.....	20
Carditis.....	4	Hydrothorax.....	2
Cerebritis.....	18	Inflammation.....	6
Cholera Morbus.....	4	Laryngitis.....	2
Cholera Infantum.....	102	Meningitis.....	52
Convulsions.....	48	Nephritis.....	2
Congestion of Brain.....	11	Old Age.....	2
Cystitis.....	1	Paralysis.....	1
Cyanosis.....	8	Peritonitis.....	4
Debility.....	46	Pertussis.....	8
Dentition.....	25	Phthisis.....	43
Delirium Tremens.....	1	Pneumonia.....	17
Disease of the Heart.....	6	Poison.....	1
Diabetes.....	1	Premature Birth.....	5
Diarrhoea.....	50	Rheumatism.....	1
Diphtheria.....	5	Rubeola.....	2
Dropsy.....	9	Scarlatina.....	1
Drowned.....	5	Scurvy.....	1
Dysentery.....	49	Sunstroke.....	2
Enteritis.....	16	Syphilis.....	1
Epilepsy.....	1	Tetanus.....	10
Erysipelas.....	1	Trismus.....	8
Fever Intermittent.....	11	Ulceration.....	7
Fever Remittent.....	5	Wounds.....	7

Total number of Deaths for August, 1866.....3415

Total number of Deaths for August, 1867.....833

Total number of Deaths for August, 1868.....715

THE
St. Louis Medical Reporter,

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VOL. III.

ST. LOUIS, OCTOBER 1, 1868.

No. 15.

HYPODERMIC THERAPEUTICS.

By Z. C. McELROY, M. D., Zanesville, Ohio.

[Read before the Muskingum County (Ohio) Medical Society, Wednesday, Sept. 2, '68.]

MR. PRESIDENT: The stock of knowledge on the subject of the subcutaneous introduction of medicinal agents into the human system, common to, and accessible to, the profession, is exceedingly small, and only found in journals of very recent date. Each member of the profession, adopting the hypodermic syringe in practice, must of necessity, therefore, feel his way with it, and work out for himself an experience to guide him in its use. Having done this for myself, it is proposed in this paper to give the results, in the nature of things limited, yet still a contribution of positive knowledge on the subject, which, it is hoped, may not be without interest or value to the Society.

3 In my hands its use has been entirely confined to adult persons, or those above fifteen years of age. It is so terribly prompt and active in its effects that it has been deemed inappropriate, or unsuitable, to children or very young persons. Not, perhaps, necessarily so, for conditions in children can be conceived where it would be very proper to use it; but the doses would, to be safe, have to be very small, almost infinitesimally small.

Until within a few weeks no other therapeutic agent than morphia has been used by me. The strength of the solution

settled upon as most convenient was half that of Magendie's, that is, eight grains to the ounce of distilled water.

The sulphate is used in preference to other salts of morphia, because of its greater solubility, as well as the stability of the solution itself. For carrying about my person, an oval ounce vial, with closely fitting pasteboard case, covered with book-binder's leather, has been found most convenient. Without the case the stopper will work out, which, besides soiling clothing, has left me without the solution when desired for use. The syringe preferred is very small, made of hard rubber, with very fine steel tube, without gilding. Both have been used, but the gilt tubes seem to give more pain in puncturing the skin than those of plain steel. A point near the seat of pain is preferred for its introduction, though not absolutely necessary, for no matter at what point the puncture is made, the effects are sooner or later diffused over the whole system. Another feature, perhaps a mere notion, is to keep the seat of pain between the puncture and the heart. When not material as to the point of introduction, or for reasons of modesty or delicacy, the insertion of the deltoid is commonly selected. On the lower extremities, the soft parts below the knee, but close to the joint, either on the inside or out, are ordinarily preferred. If introduced about the foot or hand, there will be almost invariably some œdema, with very frequently an erysipelatous blush, sometimes confined to the point of puncture, at others involving the whole foot or hand. The tissues are too dense at the back of the neck for the puncture to be easily made, with sometimes danger of breaking the tube, and is always followed by more soreness than at other places. Some point where there is least motion, as the deltoid insertion, or below the knee, or on the breast or bowels, gives the least inconvenience afterward. At all points of introduction there will follow a small, tender, indurated lump or swelling, disappearing in from two days to a week. In puncturing the skin, a fold is pinched up between the thumb and forefinger, sharp pressure being made at the moment the tube passes through the skin. It is best, too, to insert it to the extent desired by one thrust, and slowly with-

draw it as the fluid is passing out. The tube should pass through the skin quite obliquely, so that the puncture may close as a valve. Sometimes a drop of blood follows the withdrawal of the tube, more frequently a drop of serum, but quite as often there is nothing. A numb, smarting sensation is felt for some time at the point of puncture. The time for its effects to be developed varies from instantly to from one to five minutes, though sometimes longer, depending somewhat on the point of introduction. More prompt on the inside of the legs and arms and front of the body than at opposite points. No matter how urgent the necessity, the syringe should never be used on persons away from their dwelling. The effects pass over the body as a heat wave, or aura, and sometimes as rapid as a flash, speedily followed by a sense of weakness and giddiness. It bears, indeed, the same relations to the effects of medicines by the mouth as the telegraph to the mail in the transmission of intelligence. By hypodermic injection the effects are obtained with telegraphic promptness. By the stomach as by the mail, equally certain, but with far less rapidity and intensity. The most striking feature, and where the beginner commonly errs, is in using too large doses. The quantity need seldom be more than from one-fourth to one-half what would be given by the mouth. This remark is restricted to the solution of morphia. With some alkaloids, and proximate principles, as, for instance, strychnia, the dose must be diminished from the one-hundredth to the two-hundredth part of a grain. It may be remarked that nothing that is not completely soluble in water, and then without acid or irritant properties, will likely be found safe or effectual for good by the hypodermic syringe. Its greatest present value in my hands is the promptness, celerity and certainty with which acute pain may be arrested. Some persons who can not take morphia with any comfort or benefit by the mouth, will be found to tolerate it by the hypodermic syringe. Sick stomach may be expected in fully half the cases, the duration of which will depend on the dose or quantity injected. If much too large the sickness is often most distressing. When small enough, very frequently there are no unpleasant sequela.

These several facts it will be well to remember when about to use the syringe, to-wit. : the local injury, sick stomach, giddiness, sense of weakness, and abrupt change of feelings likely to ensue, some of them very quickly, others remotely, or possibly not at all, as well as the prompt relief from pain to be expected as results. The sequelæ may be incidentally spoken of to the patient as penalties or prices for the benefits to be derived.

Without these precautions timid patients are sometimes terribly alarmed and distressed, think they are dying; and so dreadful are the impressions that, in a few instances, nothing can induce them to permit its use a second time, seemingly preferring to endure any amount of suffering rather than the possible sequelæ of the injection. On the other hand, when no unpleasant sequelæ follow, no objections to its use are interposed at any subsequent time when necessary. On account of the sequelæ, the syringe, for office use, is simply inappropriate, as well as generally on persons away from home.

The curative properties of a solution of morphia by hypodermic injection must, in the main, be the same as opium introduced into the system in any other way, though some of its results are certainly unique and peculiar, and such as can not reasonably be expected at all times from its use by the mouth or rectum. As examples, the occasionally permanent relief of neuralgia may be mentioned. Without the requisite constitutional treatment such results, however, can not be usually expected.

The value of it is the certainty and celerity with which it produces its effects, and, in military parlance, *flanking the stomach*, which sometimes so pertinaciously rebels against the introduction of agents to relieve pain through its gateway into the system.

Its value as a therapeutic agent or measure is as wide as the range of human suffering, as well for the introduction of opium into the system for the relief of pain, as other agents for other purposes where there is obstinate vomiting, inability to swallow from insensibility, poisoning by opium or mechanical causes, as closure of mouth from tetanus, spasms and convulsions, &c. In no other way compatible with safety can the organic processes

of life be so promptly stayed in the hour of danger as by hypodermic injection of morphia, or other requisite agnets.

It has now been used by me several hundred times, a number of times on my own person; and since becoming familiar with the facts in regard to its use stated in this connection, with every comfort and satisfaction, not only to myself, but to those upon whom it has been used.

A few weeks since, a lady of highly nervous development, a sufferer at uncertain intervals from rheumatic gout, in the treatment of which the hypodermic syringe had been used, in later years, with the utmost satisfaction, lost the use of her right hand and arm. No form of opium by the mouth or rectum ever relieved the pain of her rheumatism; but by the hypodermic syringe the solution of morphia acted like a charm. She is a lady past meridian, very fleshy, though of delicate osseous structure in whom, very probably, the process of substitution of fat and fibrin for higher organized nervous and muscular structures is, slowly and certainly taking place. So viewing her paralysis, or if not this, purely hysterical, a mere whim of the nervous system, strychnia, in $\frac{1}{16}$ gr. to $\frac{1}{20}$ gr. doses, was prescribed and taken for two weeks without any improvement. About ten drops of a solution of strychnia, one grain to three and one-half ounces of water, was injected into her forearm three or four inches above the wrist. This was estimated to be about the one two-hundredth of a grain. The syringe had hardly been withdrawn ere she could open and shut her hand with ease and rapidity. Its action was diffused over her whole body in less than a minute, the sensation being that of tingling jerks, felt more particularly in all the indolent muscles, which continued about three hours. When it passed off she could not use her hand as well as while it was under the influence of strychnia. Next day about the $\frac{1}{20}$ gr. was injected with like prompt results, lasting six hours. Third day, as there was some considerable soreness and blush of redness near the previous punctures on her forearm, and her dress sleeve not permitting me to go higher up, the $\frac{1}{20}$ gr. was injected into the outside of her leg near the knee. The same results followed, requiring from two

to three minutes to affect her hand. The jerking continued this time about eighteen hours, preventing her from sleeping most of the following night. As she had regained the use of her hand, no further injection was made for perhaps twenty days, when there was a partial return of her paralysis. The strychnia, in about $\frac{1}{150}$ gr. doses, was injected for three successive days, with so much relief that it was again discontinued. No expectation is indulged that the relief will be permanent in this case. It probably depends on the substitution of fat or fibrin, or both, in nerve centres and muscles, for normal tissue, and will be finally irremediable.

The conclusions arrived at, based on this somewhat extended experience, in regard to the therapeutic value of the hypodermic syringe, are, that it is one of the most important contributions to modern therapeutics; and if not the equal of chloroform, it is the measure next to it in dignity and importance in the physician's armament. Then it throws a flood of light on the question of "How do medicines produce their effects?" which has occupied the medical mind so many centuries without arriving at a satisfactory solution as yet. As the civilized world is, through the medium of magnetic telegraphs, placed in such relation that all important events transpiring in any one part, however remote, can be hourly, if not momentarily, made known to all other parts; and as certain therapeutic agents, by hypodermic injection, do affect the whole human organism, sometimes almost instantly, and at all times with wonderful promptness, the analogy can hardly fail to arrest attention; and as the forces in telegraphy and organic nature are correlated, the modes by which the results are attained in either case can not but have more than a mere similitude. Such, in fact, is the case; for even the organic and physical instrumentalities, on close comparison, are found to bear more than can be accounted for by any casual or accidental resemblance. In some such way, then, as a signal is flashed over a continent, or under a sea, by the telegraph, it is probable the influence of morphia and strychnia, and other therapeutic agents, is conveyed over the human system after hypodermic injection. In the one case

of morphia, nutrition and waste are promptly brought to a comparative stand still ; while in that of strychnia, both are as certainly hastened. In the first case, the liberation of force or power is stayed, while in the other it is as certainly promoted ; else we could not have in the one prompt relief from pain, or in the other motion as promptly imparted to sluggish muscles and organs. In view of these and other facts it is not difficult to foresee that, at no distant day, the theoretical portions of human therapeutics must undergo important alterations. In fact, when the materia medica, and the therapeutics connected with it, are reconstructed on a scientific, philosophical and biological basis—arranged and classified as agents affecting the organic processes of life—that of the present and future will have few points of resemblance ; inasmuch as its nomenclature and mental associations must have undergone radical and fundamental changes, such as, it is hardly needful to say, will profit both physicians and patients. Professor Draper must have had some such mental glimpse when, some ten or twelve years since, he wrote and published in his “ *Physiology* ” the following :

“ Since it is given us to know our own existence, and be conscious of our own individuality, we may rest assured that we have what is in fact a far less wonderful power, the capacity of comprehending all the conditions of our life. * * * Far from supposing that there are many things in the structure and functions of the body which we can never comprehend, I believe there is nothing in it we shall not at last explain. * * * In the application of exact science to physiology, I look for the rise of that great and noble practice of medicine which, in a future age, will rival in precision the mechanical engineering of my own times. Then will man be a perfect monument of the power of his Creator—a created being knowing its own existence, and capable of explaining it.”—*Phys.*, p. 25.

CLINICAL CASES OF FRACTURE OF THE SKULL.

By E. H. GREGORY, M. D., Adjunct Professor of Surgery in the St. Louis Medical College.

I have often been astonished at the remarkable endurance of the brain to injuries, which, although serious and of great extent, with judicious and proper treatment, recover. A number of similar cases not unfrequently occur together. It has been my lot to have quite a run of head injuries recently.

Case No. 1.—A man aged twenty-five; compound fracture in upper left occipital region; several fragments deeply depressed, but so juxtaposed as to make it impossible to find a bearing for the elevator. A flap was made, the trephine applied, the fragments removed, and depressed borders elevated. The accident was the result of a blow with a stone. The symptoms of concussion had been transient, and those of compression slight. The patient slept well after the operation, and was up the following day, despite injunctions to the contrary, and his recovery rapid and complete. Operation twelve hours after injury.

Case No. 2.—A boy of twelve; compound fracture in upper left parietal region, resulting from the fall of a heavy iron vase from top of gateway; bone driven in, and overridden by adjacent border, fixed in such a way as to preclude the possibility of using the elevator without the trephine, which was accordingly used, and the bones adjusted. The boy had recovered his consciousness before the operation, three hours after the accident, and, so soon as the surgical procedure was complete, he slept, and seemed quite well the following day. The case proceeded satisfactorily, with purging and cold applications. After three months, several large pieces of diseased bone were removed. The patient still complains of pain in the head when he applies himself assiduously to study. The dura-mater was wounded.

Case No. 3.—A boy of ten years; patient of Dr. O. F. Potter; struck by his stepfather with a stick of wood, doubtless a sharp border impinging, inflicting an extensive compound fracture across the vertex. Here, too, the depressed border was wedged under the contiguous one, and brain was oozing out. The

patient seemed unconscious till the operation was began, when it was necessary to give chloroform. The trephine was used, the procedure successful, and the progress of the case favorable, till on one occasion Dr. P. was alarmed by cerebral symptoms, which, however, subsided immediately upon the removal of the dressing and the eruption of a considerable amount of pus.

The three cases above are remarkable for the absence of symptoms indicating general injury of the brain. There was little evidence of concussion, and the signs of compression less than might have been expected from the depressed bone. The effects of the violence seemed to be local, and the great source of danger being removed by the removal and elevation of the fragments, the patients fortunately escaping inflammation, the results were most favorable.

As is the degree of concussion, so is the danger. Concussion, deep and protracted, merging perhaps into compression, implies condensation, contusion, laceration—not alone of the part struck, but of the entire contents of the cranium. With such grave conditions there is generally simple fracture. Broad, blunt, heavy bodies break the bones, crush the brain and rupture the blood vessels, yet do not wound the scalp. Narrow, sharp, angular bodies make ghastly rents, but after all only inflict local injuries. Think of it, the trephine can not ordinarily add to the danger of compound fracture, but becomes the means of rescuing the subjects of those accidents from certain death.

Case No. 4.—A man of thirty, struck by a slung shot; wound near parietal eminence. Saw the case four weeks after the accident, and as the patient had been in charge of an eminent surgeon, and so much time had elapsed, it was thought scarcely necessary to examine critically the implicated parts. The patient was slight but vigorous; complained of intense pain at site of injury, otherwise seemed well. After purging and quiet for a few days, the complaint persisting, I enlarged the wound, which was yet discharging, and to my astonishment found several fragments, some penetrating the membranes, the surrounding bone considerably depressed. After the operation,

the pain, which had been extreme and unremitting, was gone, and in a few days the patient seemed quite well.

This case illustrates the absolute importance of early and earnest exploration of compound fracture of the skull. The suffering and danger through which the patient passed might have been anticipated; as it was, he was probably saved from abscess by the late removal of the difficulty.

Case No. 5.—A girl of seven; compound fracture in upper fronto-parietal; piece of bone size of a twenty-five cent coin driven in, and completely detached and wedged under adjacent borders; inconsiderable concussion; patient inclined to sleep; pupils natural; pulse and respiration good, and consciousness complete. Accident caused by falling from a second story window, and alighting upon a rock the size of a man's fist; the stone on the bare ground probably impressing a less diffused violence than if the head had struck the ground, the impulse being broken by the yielding of the skull at site of fracture. As there were two wounds of scalp, I connected them by incision, reflected the flaps, and lifted the fragment as described from its deep situation; and, as it was so nearly detached, removed it entirely. The flaps were now adjusted, and maintained by a point of twisted suture, after which there was no cause for anxiety in the case.

Case No. 6.—A man of forty; compound fracture in upper fronto-parietal region, very deep and abrupt, produced by a stone, weighing more than three pounds, thrown by a drunken comrade, himself also drunk. I saw the patient twenty-four hours after the accident; found him quite conscious, without fever or paralysis; no symptom to warrant any anxiety. The wound in the scalp was ample, and with the finger I determined the situation, and proceeded at once, and without chloroform, to remove and adjust the fragments, lifting out eighteen pieces, exposing the dura-mater for more than an inch, after which the usual water dressing was applied, and the case committed to the attending physician. I learned from the patient, who called on me six weeks after the accident, that he had not a bad symptom.

Case No. 7.—Youth of eighteen, thrown from a horse at full speed against an ordinary rail-fence, striking a firm rail about three-fourths from the bottom, literally crushing one side of the head, converting the left hemisphere into pulp. The accident occurred at twelve o'clock in the day, and I saw the patient fourteen hours after. The skin was natural; the pulse full and strong, and about ninety; respiration slow but perfect, without noise; left side paralyzed; entire consciousness, and acute sensibility; questions were asked and answered, and conversation well sustained. A quantity of blood and brains was heaped upon the injured side, and cerebral substance was oozing out constantly in masses as large as a grain of corn, and so continued to time of death, which took place sixty-three hours after the injury. The skull was extremely comminuted, large fragments crossed and piled on each other almost inextricably, all confusion and disorganization, yet the sufferer survived for several hours; was conscious, composed and hopeful; a shocking example of the possibility of tolerable perfection of most of the functions, not after the gentle and quiet slicing away of a large part of the brain, but apparently after the sudden crashing of an entire hemisphere.

This was, indeed, a heart-sickening spectacle; a quantity of brain substance and blood, amounting to more than a pint, was removed, and large fragments of bone picked out with the fingers, and others drawn from confusion as best we could, the wound being left open, shielded only by a napkin. Twenty-four hours elapsed; no change; brain continuing to well up in almost a continuous stream, yet friends almost indulged hope, soon to be lost.

Case No. 8.—A man of thirty, the patient of Dr. T. H. Hammond, had a compound comminuted fracture in temple, just above and in front of ear, caused by the kick of a horse; depression deep, abrupt, irregular. There was but partial consciousness for several hours; pulse slow, and respiration noisy. When the patient came under my observation, three days after the accident, consciousness was good, respiration and pulse nearly natural. Under chloroform, I removed the impacted fragments

and elevated borders, and left the patient, two hours after, in a prosperous condition, since which time I have not heard, as the case is one hundred and fifty miles distant.

In the eight cases reported the trephine was used but three times, showing that in a majority of cases requiring surgical interference it is possible to get an elevator under the depressed bone without any additional injury. The fragments may seem inextricably impacted, but patience will enable one to find a point under which the instrument may be insinuated, and the arch broken, when the operation becomes easy. The dura mater was certainly injured in three cases. Injury to membranes adds materially to the danger.

I append the following very remarkable case from the Pennsylvania Hospital Reports for 1868, page 304:

At the battle of Leipsic, a ball penetrated the middle of parietal bone, about half an inch from the edge of the sagittal suture. Six days after he was sent, with the slightly wounded, to Altenburg, where he recovered very rapidly, and so fully that he abandoned himself to all the pleasures of life.

At an examination, made six weeks afterwards, of the still suppurating wound, the sound not only penetrated to the ball, but moved laterally so much that it was decided that the entire right hemisphere had suppurated. A short time after the wounded man traveled to Silesia, in perfect health, except with a slight suppuration of the wound.

This is probably the same man whose death was reported to have suddenly taken place in Glogen, in 1820, and in whose post-mortem examination it was found that half of the brain was absent.

An electrical probe has been devised in France for the examination of gun-shot wounds. When the points of the instrument come in contact with the metallic body, a circuit is made, and the fact announced by the ringing of a small bell.—*Medical Gazette.*

SPURIOUS VACCINATION IN THE CONFEDERATE STATES ARMY.

By J. T. GILMORE, Mobile, M. D., Ala., (formerly Surgeon in C. S. A).*

PROFESSOR PAUL F. EVE :

Dear Doctor—I promised Dr. Nott before he left us for Baltimore to write Prof. Jones relative to spurious vaccination, of which I saw a great deal in the army in Virginia, and, as I am in your debt a letter, I trust you will pardon me for doing so through yourself.

The small pox broke out in the army in Virginia, shortly after the battle of Sharpsburg, whilst we were in camp in the Valley in the vicinity of Winchester, reorganizing and watching the movements of McClellan. The first case occurred in the brigade of Gen. G. T. Anderson, of Georgia. At that time I was the chief surgeon of McLaw's division. The disease did not show itself in my command until the latter days of October. The first case occurred in a private of the 10th Mississippi regiment, who contracted it whilst hauling supplies from Staunton for the army. It, however, did not make much headway until after the battle of Fredericksburg, the 13th and 14th of December, I believe. The act of Congress reorganizing the army after the expiration of the twelve months' volunteers, provided that each man who re-enlisted should receive, in addition to the bounty, a furlough for thirty days, and Gen. Lee, in order to carry out the provisions of this act, without materially weakening the army, issued a general order granting furloughs to two men to every hundred on duty. This order, I think, was issued whilst we were in the Valley. Shortly after the battle of Fredericksburg, a private in Semmes' Georgia brigade returned to his command, who had received a furlough under the order. He came back to his regiment with what he supposed was an ample supply of virus for all of his friends, a large number of whom he vaccinated, not only in his own brigade, but also in Cobb's. In this way the impure virus obtained a strong hold in these two brigades.

*The above was communicated to the *Medical Reporter* for publication by Prof. Jos. Jones, with the consent of Prof. P. F. Eve, to whom it was addressed.

McLaw's division was composed of four brigades Kershaw's South Carolina, Barksdale's Mississippi, Semmes' and Cobb's Georgia brigades ; but I don't recollect that I saw a single case in either Kershaw's or Barksdale's commands ; but in the two other commands we had about three hundred cases.

By the directions of the Surgeon and Medical Director, L. Guila, I had two hospitals established, one for Semmes' and the other for Cobb's brigade ; Semmes' under the charge of Surgeon Todd, and Cobb's under the charge of Surgeon Eldrigedge. For some cause, which I don't recollect, Dr. Guila thought it better that these cases should not be sent to general hospital ; and it being impossible to obtain suitable buildings, tents were used. The cases presented the appearances that are familiar to those of us who were connected with the Confederate army—large, rupia looking sores, sometimes only one, generally several, on the arm in which the virus had been inserted. In a number of cases these sores extended, or rather appeared, on the forearm ; and in two cases that I saw, they appeared on the lower extremities. These men suffered severely from nocturnal rheumatism ; several cases had, to all appearances, syphilitic roseola. I saw enough of the trouble to convince me thoroughly that the virus owed its impurity to a syphilitic contamination.

The cases all improved under the administration of the iodide of potassium and vegetable diet. In some of the cases Gross' combination of the iodine pot. and corrosive sublimate was employed. In many of them there was a marked scorbutic tendency, which may in part account for the bad effects of the virus ; but there were in the great majority of the cases unmistakable evidences of syphilis. When the hospitals were broken up, just a few days before the battle of Chancellorsville, there remained under treatment about twenty cases that were sent to general hospital at Richmond.

To Surgeon Todd we are indebted for the following facts, that were embodied in a report made myself to Surgeon Robert J. Breckinridge, Medical Purveyor of the army. To the man above alluded to, who returned to his command shortly after the battle of Fredericksburg, was traced the origin of the vaccine

virus that had wrought so much mischief in the two Georgia brigades. He stated that on his way back to the army he was detained in Augusta, Ga., and whilst there visited a house of ill-fame, and was vaccinated by one of the female inmates. This man denied ever having had syphilis previous to his vaccination. The rupia looking sore on his arm, and a roseolous eruption of the skin, of a coppery hue, added to the fact that others vaccinated from his sore presented many of the characteristic features of constitutional syphilis, are, to my mind, unmistakable evidences that syphilis may be communicated. I will not say by vaccine lymph, but certainly by vaccination; possibly by getting a small quantity of blood on the point of the lancet in performing the operation.

I am unable to say whether the woman by whom this man was vaccinated had syphilis or not.

In thinking of this subject, the thought suggests itself to my mind, that if the blood can convey a poison, that the vaccine lymph would be equally as capable. For if there is anything in our theories about cells, and especially if the cells have an individual existence, certainly it is fair to presume that any cell that has its existence from a person suffering from a constitutional disease, might have imparted to it the disease of the parent. In no other way can we account for the transmission of disease from father to child. And then again the query arises, if the blood can be poisoned by a disease of the cells, why may not the other fluids be also. But this is theorizing, and we are after facts; and I think my experience will sustain me in the assertion, that syphilis may be communicated by vaccination. I am not prepared to say that its transmissibility is not due to a small quantity of blood that happens to get on the point of the instrument when the operation is performed, by inserting the virus directly from the arm of another, or by a small quantity that happens to get on the crust when removed; but I am forced to conclude that I can see no reason why vaccine lymph can not as well be the vehicle of contagion as blood itself.

The testimony of a distinguished member of our profession is strong in proof that syphilis may be communicated by the blood, who affirms that he had constitutional syphilis from a poisoned wound got from operating after the battle of Shiloh.

ON TURNING IN MIDWIFERY.

BY DR. ROBERT BARNES.

If we were restricted to one operation in midwifery as our sole resource, I think the choice must fall upon turning. Probably no other operation is capable of extricating patient and practitioner from so many and so various difficulties. In almost every kind of difficult labor with a pelvis whose conjugate diameter exceeds three inches, it would be possible to deliver by turning with a reasonable prospect of safety to the mother, and in many instances with probable safety to the child. We might very greatly restrict craniotomy. We might dispense with the forceps; but neither forceps nor craniotomy will serve as a substitute for turning in special applications. It is difficult, therefore, to exaggerate the importance of carrying to the utmost limit the perfection of this operation. Yet the text books exhibit a very inadequate appreciation of the subject. Turning by the feet was once said, not inaptly, to be the master-stroke of the obstetric practitioner. And still the operation was very imperfectly developed.

I propose to describe and illustrate with some fullness the conditions upon which the mobility of the fœtus *in utero* depends, the various modes by which the fœtus may be made to change its position, and the application of this knowledge to the practice of turning, embodying the teaching of Wygand, d'Outrepont, Radford, Simpson, d'Esterlé, Lazzati, Braxton Hicks, myself, and others.

Having regard to the various allied operations which it is convenient to class under a general description, I would define turning as including all those proceedings by which the position of the child is changed in order to produce one more favorable to delivery.

There are three things which it is very desirable to know as much about as possible before proceeding to the study of turning as an obstetric operation.

1. What are the conditions which determine the normal position of the fœtus *in utero*?

2. What are the conditions which produce the frequent changes from the ordinary position?

3. What are the powers of nature, or rather the methods employed by nature, in dealing with unfavorable positions of the fœtus?

1. *The Conditions that determine the Normal Position of the Fœtus in Utero.*—It would be idle to do more than glance at the fanciful ideas upon this subject that have obtained currency at various times, although most have an element of truth in them. Ambroise Pare believed that the head presented owing to the efforts made by the child to escape from the uterus. Even Harvey believed that the fœtus made its way into the world by its own independent exertions. Dubois endeavored in a long argument to show that the fœtus has instinctive power, which determines it to take the head-position. Simpson rightly concluding that the maintenance of normal position depends very much upon the life of the fœtus, observes that it has no power of motion except muscular motion, and infers that the fœtus adapts itself to the uterus by reflex muscular movements excited by impressions—as by contact with the uterus—upon its surface. Thus we come down by a curious scale of theories, in which the philosopher may trace the influence of contemporary physiological doctrines or knowledge. First, the fœtus is endowed with the high faculty of volition; then it falls to the lower faculty of instinct; and, lastly, it is degraded to the lowest nervous function—that of reflex motion. I should be disposed to estimate at a still lower point the influence of the fœtus as an active agent in maintaining its position during pregnancy or labor. It is incontrovertibly true that the normal position of the fœtus and the course of labor are intimately dependent upon the life of the fœtus. But I think I am enabled to affirm from very close observation that a fœtus, if full grown and only recently dead—that is, for a few hours—may be nearly as well able to maintain its position and to conduce to a healthy labor as one that is alive. How is this? It depends simply upon the preservation of sufficient tone and resiliency in the spinal column and limbs to maintain the form and posture of the fœtus.

Whilst alive, or only recently dead, the spine is firmly supported in a slight curve, the limbs are flexed upon the trunk, the whole fœtus is packed into the shape of an egg, which is very nearly the shape of the cavity of the uterus. It has a long axis, represented by its spine. This long axis, being endowed with sufficient solidity, resembles a rod, rigid or only slightly elastic. It is a lever. Touched at either pole, the force is propagated to the opposite pole. If the head impinge upon one side of the uterus, the breech will be driven into contact with the opposite point of the uterus; head and breech will move simultaneously in opposite directions. In labor, when the uterus is open to admit of the passage of the fœtus, the propelling power applied to the breech is propagated throughout the entire length of the spine or long axis, so that the head, the end furthest from the direct force, is pushed along in the direction of least resistance, turning at those points where it receives the guiding impact of the walls of the canal.

When the fœtus has been some time dead, the elasticity and firmness of its spine are lost; flaccidity succeeds to tonicity. Force applied to one extremity is not propagated to the other extremity—or, at least, very imperfectly so; the long axis bends, doubles up like a rod of gutta-percha softened by heat. If, the fœtus in utero being in this state, "pressure being applied to one side of the head, the head will simply move towards the opposite side of the uterus. And if labor be in progress, the propelling force applied to the breech will not be duly transmitted to the head, but will tend to double up the trunk, to make it settle down in a squash in the lower segment of the uterus or in the pelvis. The head—the cervical spine having lost its resiliency—will not take the rotation and extension turns. It will run into the pelvis like jelly into a mould. Or, at an earlier stage, the limbs, especially the arms, having lost their tonicity, drop or roll in any direction under the influence of gravity or of pressure; and hence may fall into the brim of the pelvis, constituting what are called transverse presentations. The influence of this law is clearly seen in the course of that

process called "spontaneous expulsion," by which a dead child is expelled, a shoulder presenting.

Other factors besides the child have to be considered. Scanlon correctly observes that the frequency of head presentation is dependent on the operation of various causes. 1. There is the force of gravitation. 2. The form of the uterine cavity. 3. The form of the fœtus (to which must be added the properties I have described due to life or death). 4. The quantity of amniotic fluid. 5. The contractions of the uterus during pregnancy and the first stage of labor. In the early stages of pregnancy the embryo is so small relatively to the cavity containing it that it floats suspended in the liquor amni. But about the middle of pregnancy the fœtus grows rapidly; it acquires form; and, at the same time, the uterus grows more in its longitudinal than in its transverse diameter. As soon, therefore, as the fœtus—an ovoid body—attains a size that approaches that of the capacity of the uterus, the walls of the uterus will impose upon the fœtus a vertical position. The fœtus has become too long to find room for its long diameter in the transverse diameter of the uterus. Mutual adaptation requires that the long diameters of fœtus and uterus should coincide.

A condition not, to my knowledge, hitherto noticed, which has a powerful influence upon the determination of the child's position in utero, is the normal flattening of the uterus in the antero-posterior direction. In the non-pregnant uterus, the cavity of the body—the true and only gestation-cavity—is a flat triangular space, the angles of which are the orifices of the Fallopian tubes and the os internum uteri. A similar triangular superficies is marked out on each half of the uterus, anterior and posterior. The anterior superficies lies flat against the posterior superficies, touching it as if the two were squeezed together. When pregnancy supervenes these surfaces are necessarily separated to form a cavity for the growth of the ovum. But the original form is never entirely lost. The cavity is always more contracted from before backwards than from side to side. This is proved by direct observation if the fingers are introduced after abortion, or the hand after labor at

term. The uterine cavity is closed by the flattening of the anterior and posterior walls together. This takes place the moment the uterus contracts. If the finger or hand be in the uterus at the time, this is plainly felt. Now, this flattened form of the uterus is the reason why the foetus takes a position with either its back or its belly directed forwards. The foetus is broader across the shoulders than from back to front, and therefore its transverse diameter is fitted to the transverse diameter of the uterus. There is a physiological design that dictates the downward position of the head. The fundus is the part designed for the implantation of the placenta, where it can grow undisturbed, and continue its functions during the expulsion of the child. The lower part of the cavity is therefore left free for the development of the embryo. Why the back is commonly directed forwards to the mother's belly is this: the child's back is firm and convex; its head is also firm and convex behind. The anterior aspect of the child's body is plastic and concave, and therefore fits itself better to the firm convexity of the mother's spine. It is clear that the two solid convex spines of mother and child would naturally repel each other; and the child being movable, it is the child's back that recedes, turning forwards.

2. *The conditions which produce the frequent Changes in the Child's Position.*—Any considerable disturbance of the correlation of the factors which keep the foetus in its due position of course favors malposition. The principal disturbing conditions may be stated as follows: *an excess of liquor amnii* acts in two ways—first, it favors increased motility of the foetus; secondly, it tends to destroy the elliptical form of the uterus. The transverse diameter increasing in greater proportion than the longitudinal, the cavity becomes rounder. Hence the foetus is no longer kept in a vertical position for want of the proper relation between its form and size and those of the uterus.

Obliquity of the uterus was considered by Deventer to be a main cause of malposition. It is now very much discredited, but I am disposed to believe that it has, not seldom, a real influence. Dubois and Pajot showed that in one hundred women

seventy-six exhibited a marked lateral obliquity to the right, four to the left, and twenty an anterior obliquity. Wigand had shown that deviations of the uterus to the right and forwards were far the most frequent. The normal direction of the non-pregnant uterus is nearly that of the axis of the pelvic brim. As it grows during pregnancy, rising above the brim, the projecting sacro-vertebral angle and the curve of the lumbar column deflect its fundus to one or the other side; and, if the abdominal walls be very thin and flaccid, the fundus will fall forwards. The tendency of these obliquities, if carried beyond ordinary measure, is to throw the axis of the uterus out of the axis of the pelvic brim, and to bring some other part than the vertex of the fœtus to present. The probability of this will be increased by the irregular contractions of the uterus likely to be excited by parts of the fœtus pressing unequally upon its walls. For example, in extreme lateral obliquity the breech may press strongly upon one side of the fundus; contraction taking place here, will drive the head further off the brim on the edge, where, if it finds a *point d'appui*, it will rotate on its transverse axis, producing forehead or face presentation, and favoring the descent of the shoulder. Wigand explains how a too loose and shifting relation of the uterus to the pelvis disposes to cross-birth. In this condition it is observed that the head is now fixed in one place, now in another, and now not felt at all.

He further says that an obliquity of the uterus exceeding an angle of 25° is unfavorable; and that even a lesser obliquity, with excess of liquor amnii or a small child, is likely to cause the presenting head to be displaced, and to bring a shoulder into the brim, especially if strong pains or bearing-down efforts be made early in labor.

He explained that the os uteri might be brought over the center of the brim by internal drawing upon the os, combined with external pressure upon the fundus in the opposite direction, thus putting in practice the principle of acting simultaneously upon the two poles of the uterus.

Deformity of the pelvis or lumbar vertebræ is often a powerful factor. The comparative frequency of transverse presenta-

tions in cases of deformed pelvis is certainly greater than where the pelvis is well-formed. I think, however, that slight deformity has more influence in causing malposition than extreme degrees. In these latter malpositions are rarely observed.

The attachment of the placenta to the lower segment of the uterus is, as Levret has clearly shown, a cause of malposition by forming a cushion or inclined plane, which tends to throw the fœtal head out of the pelvic axis across the brim. Hence the frequency of cross-birth and of funis-presentation in cases of partial placenta prævia. But there are numerous cases in which the placenta dips into the cervical zone, growing downwards from the posterior and lateral walls of the uterus, without leading to hemorrhage, and thus not suspected to be cases of placenta prævia, which, nevertheless, form an inclined plane behind or on one side and produce malposition.

Then there is the influence of external forces, as of pressure applied to the uterus through the abdominal walls. The dress of a woman at the end of pregnancy is a matter of no small moment. The pressure of a rigid busk of wood or steel upon the fundus of the uterus, modified by the various movements and postures of the body, may flatten in the fundus, thus reducing the longitudinal diameter of the uterus, or it will push the fundus to one side, causing obliquity. It will, at the same time, press directly upon the breech, and thus tend to give the fœtus an oblique position, throwing the head out of the pelvic axis. Pluriparæ should do the reverse of this. They should wear an abdominal belt, which supports the fundus of the uterus from below upwards.

Want of tone in the uterus, which implies inability to preserve its elliptical form, and a tendency to fall into rotundity, is a form which obviously favors malposition.

Irregular or partial contraction of the uterus causes malposition. Nægele insisted upon this. He found that in some cases malposition was averted by allaying spasm.

The researches conducted by several German physicians, amongst whom I may cite Crede, Hecker and Valenta, establish

the fact that the fœtus changes its position with remarkable frequency. Valenta examined 363 multiparæ and 325 primiparæ in the latter months of pregnancy. He found that a change of position took place in 42 per cent. Change was more frequent in multiparæ, and in these in proportion to the number of previous pregnancies. Narrow pelves very frequently cause change of position. Circumvolutions of the cord, so often observed, are produced by changes of position, and hence bear evidence to the correctness of the proposition. It is interesting to observe that the general tendency of changes of position is towards those which are most propitious. Thus, cranial positions are least liable to change. Oblique positions are especially liable to change. These mostly pass into the long axis by spontaneous evolution. Self-evolution is a very frequent resort of nature. In some cases several changes of position have been observed in the same patient. The presentations are made out by external manipulations. Valenta thus describes his method of ascertaining a breech position during pregnancy: He lays his right hand flat on the fundus uteri, and then strikes the tips of the fingers as suddenly as possible towards the cavity of the uterus, against the part of the child lying at the fundus. By this manœuvre he has always succeeded in recognizing the head: if lying at the fundus, by its peculiar hardness and evenness. He detects the head in oblique and cross positions in the same manner. P. Muller relates a case in which within five days a complete version of the fœtus was effected six times.

Yet the fact of the "spontaneous evolutions" of a living child, as described by Denman from actual observation has been doubted!—*Med. Times and Gaz. and Braithwaite's Retrospect.*

One of the Paris medical papers notices the death, at the age of eighty-seven, of a nun in a Carmelite convent in Italy, who had been bled in the course of her life three hundred and seventeen times for attacks of rheumatism, to which she was subject.

THE INFLUENCE OF THE WEATHER ON HEALTH.

Dr. Ballard's nine aphorisms on the influence of weather upon sickness are thus given in his recent Report on the Health of Islington for 1867:

1. That an increase of atmospheric temperature is normally associated with an increase of general sickness.

2. That a decrease of atmospheric temperature is normally associated with a diminution of general sickness.

3. That for the most part the increase or decrease of sickness is proportional in amount to the extent to which the atmospheric temperature rises or falls.

4. That it is an error to suppose (as is popularly held) that sudden changes in temperature are (as a rule) damaging to public health. A sudden change from cold to hot weather is indeed very damaging; but a sudden change from hot to cold is one of the most favorable circumstances that can occur when sickness is regarded broadly as respects a large population.

5. That, remarkably enough, these influences are most marked in the directions I have mentioned in the colder season of the year, and more certain in the winter than in the summer.

6. That rises and falls of temperature are more certain and effectual in their special operation upon public health when at the same time the daily range of temperature is lessened, than they are when the daily range is at the same time increased; rises of temperature increasing sickness more certainly and markedly, and falls of temperature decreasing it more certainly and markedly.

7. That a fall of rain lessens sickness generally, sometimes immediately, sometimes after a short interval, and that, as a rule, the reduction of general sickness is greater when the fall of rain is heavy than when it is light.

8. That drought, on the other hand, tends to augment general sickness.

9. That wet weather in the summer season operates more certainly in improving public health than it does in the winter season.—*Med. Times and Gazette.*

UNUSUAL EFFECT OF SUBCUTANEOUS INJECTION.

By F. WOODHOUSE BRAINE, F. R. C. S.

Mrs. H. C., aged 35, in good health otherwise, had been kept awake for seventy-two hours by intense neuralgic pain on the left side of the head, face and neck, arising from a carious molar tooth on the left side of the lower jaw. She was injected with morph. acet., 1-3 gr. At 1 A. M. on June 28th last, the morphia, dissolved in about four drops of water, was introduced under the skin of the left arm, just over the insertion of the deltoid. No blood appeared at the puncture. In about fifteen seconds, tightness of the chest and difficulty in breathing was complained of, and the patient asked to be raised, saying she felt as if she were dying. Her face and lips now became pale; speech became indistinct (not inaudible); pulse irregular; some spasms of the facial muscles took place, and she fell back to all appearance dead. Cold water was freely dashed over face and chest, and, as she was unable to swallow, her tongue was rubbed over with sal volatile, and ammonia applied to her nose, artificial respiration being kept up at the same time. During this time her face was blanched, pulse not to be felt, and respiration not to be perceived. Insensibility continued for about three minutes; then, happily, one or two feeble beats of the pulse, and a shallow inspiration or two, showed returning animation. She then became conscious; pulse feeble but regular; respiration slow; fingers remained numbed, and both thumbs were firmly drawn into the palms of the hands. This passed off in about six minutes, leaving her feeling very ill, but free from neuralgic pain, which did not return. There was no feeling of nausea and no attempt at vomiting during any part of the time.—*Medical Times and Gazette*.

Coal oil lamp explosions may, as a general thing, be prevented by proper attention to the trimming of the wick, and filling the lamps in the mornings. Lamps should be attended to, cleaned, filled and trimmed positively every day. This will guarantee a clear, full light, and prevent danger, for the explosion is caused

by a practice of neglecting to cut off the charred portion of the wick when the lamp is filled; and observation will show that in a few days' use the wick becomes like charcoal in composition, for an inch below the top of the tube containing it, and after the lamp has burned a short time the heated tube fires all of the charred portion of the wick inside, and that sets the oil on fire below. This may be prevented by cutting off a sufficient portion of the barren wick each day after using the lamp.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

HUMAN PHYSIOLOGY, STATICAL AND DYNAMICAL, OR THE CONDITIONS AND COURSE OF THE LIFE OF MAN. By JOHN WILLIAM DRAPER, M. D., Professor of Physiology and Chemistry in the University of New York. Harper & Brothers, Publishers: New York. 1888. Seventh Edition.

This is one of the most remarkable works ever published on the abstruse science of physiology. Dr. Draper has one of those progressive minds, far-seeing and logical, that always are in advance of their present surroundings. As an original thinker he has but few, if any, equals in this country. His views are peculiarly set forth in the present work. We quote from his preface:

"To treat physiology as a branch of physical science; to exclude from it all purely speculative doctrines and ideas, the relics of a philosophy (if such it can be called) which flourished in the Middle Ages, though now fast dying out, and from which the more advanced subjects of human knowledge, such as astronomy and chemistry, have long ago made themselves free—to do this, amounts, in reality, to a reorganization and reconstruction: a task of extreme difficulty, and for complete success demanding the conjoint labors of many philosophers and many physicians.

"At the best, therefore, such an attempt, embracing the whole science, made by a single individual, must needs be unsatisfactory, if any thing like a rigorous criticism be applied. And yet it may be truly said that the interest of the medical profession at the present time requires that such encouragement as this work has received should be extended to every undertaking of

the kind. I hope that the success which has in this manner attended my labors may prove an encouragement to others to devote themselves with better results to a similar task.

"To physicians I would earnestly address myself, in the hope of obtaining their continued aid and hearty patronage for every such attempt. I would ask them why it is that we never hear of empiricism in natural philosophy, engineering, astronomy? Is it not because the principles upon which those subjects rest have ceased to be speculative, and are restricted to the demonstrative, the experimental, the practical? In philosophy, sects only arise while principles are uncertain; in medicine, the quack only exists because there is a doubt. And considering the condition to which the medical profession in our times has come, considering its decline in social estimation, and its shortcomings even in its own judgment—is it not the duty of every physician to inquire into the causes of such a state?

"To students of medicine I may be permitted on this occasion to say a few words. It was chiefly with the hope of influencing them, and guiding them into the paths of scientific physiology, that I was first induced to write this book. I would impress on them the importance of cultivating habits of thought arising from the exact and practical sciences. A great revolution is impending over the profession to which they have devoted themselves. If they design to take a leading position, not merely following it as an industrial pursuit, but regarding it as one of the most dignified and noble of human occupations, they must prepare themselves in a manner consistent with the modes of thought that must prevail in the times now quickly approaching. It may be too much for us to expect that our contemporaries, who have been educated in the ideas of the past, should unlearn so much of what they have learned, should in so many things begin their studies again; but we may demand a right preparation from those who are only now commencing. In offering to them this book, I do not present an untried work. It is the result of an experience in teaching for many years, an attempt to set forth in plain language the great features of the science, and to give in sufficient detail a representation of the

present state of physiology. For the purpose of facilitating its study, I have divided the whole subject into two branches, statical and dynamical. The expediency of this has been impressed upon my attention by the necessity of conforming the course of lectures, of which these pages are an abstract, to the wants of a medical class. The physician is chiefly concerned with the conditions of life—the organic functions, as digestion, respiration, secretion, &c. The doctrines of development and the career of an organic form are of less pressing interest; but it was very soon found that other advantages were derived from this subdivision, as might have been expected from its conformity to the usages of writers on other branches of physical science.

“To the general reader I may remark that I have endeavored to carry out in the following pages the spirit of what is contained in the preceding paragraphs. I have devoted more than twenty years not merely to the study, but also to the experimental determination of physiological questions, of which only a summary could here be offered. It was not possible to give my own results more in detail in a formal text-book on the entire science, but it may not perhaps be improper here to say that opinions sometimes delivered in a few lines have cost me many days, or even weeks, of expensive and laborious experiment.

“In this work I have therefore endeavored to treat of man according to the methods accepted in physical science, but still of man as an individual only. Physiology, however, in its most general acceptation, has another department connected with problems of the highest interest. Man must be studied not merely in the individual, but also in the race. There is an analogy between his advance from infancy through childhood, youth, manhood, to old age, and his progress through the stages of civilization. In the whole range of human study there are no topics of greater importance, or more profound, than those dealt with in this second department or division. It is also capable of being treated in the same spirit and upon the same principles as the first.”

The present edition has been brought up fully to the advance

of physiological science, and is, we confidently believe, the best work on the subject. We shall be glad to notice Dr. Draper's other works as soon as received.

ON DISEASES PECULIAR TO WOMEN, INCLUDING DISPLACEMENTS OF THE UTERUS. By HUGH L. HODGE, M. D., Emeritus Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania, with illustrations. Second edition. Revised and enlarged. Philadelphia: Henry C. Lea. 1888. [For sale by the St. Louis News Company].

There has been so much written on the diseases of women of late years, that the general reader would almost think that all the ills that females are heir to originate in the womb. So fashionable, indeed, has the subject become that every young physician is ambitious of being called a "gynecologist," and all his female patients soon become infatuated with the idea that something is the matter with their womb, and unless they have been operated upon, by cutting or cauterizing the uterus in some way, that they will never see a day's health, or rather they will not be in the fashion. Now, we do not indorse this mania for operations, and it is with feelings of relief and pleasure we take up such a work as the present, devoted to a sound, rational system of treatment of the diseases incident to females; and even though we may be called old foggy, we do most heartily endorse and recommend Professor Hodge's work. It is dedicated to our own venerated teacher, Prof. Charles D. Meigs, who, like Prof. Hodge, favors conservatism, and, I may say, common sense, on this all-important subject.

The first part of the work is devoted to nervous irritation and its consequences; the irritable uterus, with the general and local symptoms of the same; the reflex influences of cerebral and spinal irritations; the progress, results, causes and pathology of irritable diseases as affecting the uterus, with the treatment of the same; also the treatment for all complications and affections, both secondary and sympathetic, resulting from irritable and diseased conditions of the uterus.

The second part of the work relates to the various displacements of the uterus. First giving the natural position and support of the uterus, then the varieties of displacements and their causes, symptoms of displacements, together with the general

and local treatment for the same ; also the diagnosis, pathology and treatment of enlargements and displacements of the ovaries.

Part third relates to the diseases of sedation, organic and nervous ; sedation of the uterus.

The work is amply illustrated, especially the chapter on the varieties and manner of using, introducing and removing pessaries.

Taking the work altogether, it is one of the most valuable of the many lately published. We commend it to our readers, and especially to medical students. It is issued in the usual elegant style which characterizes all works from Mr. Lea's house.

A MANUAL ON EXTRACTING TEETH, FOUNDED ON THE ANATOMY OF THE PARTS INVOLVED IN THE OPERATION. By ABRAHAM ROBERTSON, M. D., D. D. S. Lindsay & Blakiston: Philadelphia. 1868. [For sale by the St. Louis News Company].

This is a most useful and interesting little manual. Outside of the dental profession, perhaps, no operation in minor surgery is, as a general rule, more wretchedly performed than that of extracting teeth. The present work lays down some good practical rules as a safe guide for the operator, also fully illustrating the best instruments to be used, when, how and why a tooth should be extracted, and all the details of this most painful operation. To the dental student it will be a valuable addition to his text-books, and to the dentist a ready reference ; but to the country physician, who, from necessity, has most of the teeth extracting of his patients to perform, it will be a safe and trustworthy guide.

PHYSICIANS' VISITING LIST FOR 1869. Published annually by Lindsay & Blakiston: Philadelphia.

This is the original "Visiting List," being the first published in the United States, and has long been favorably known and used by a large number of the profession. The edition for 1869 is now issued, and can be procured in advance, so as to be ready at the beginning of the new year. It is too well known to require additional commendation, being one of the best in use.

Price, in leather, for twenty-five patients, \$1 25 ; for fifty patients, \$1 50. Lindsay & Blakiston have also issued their new catalogue of medical books, which will be sent to any address on application, or can be seen at our office.

MEDICAL REPORTER.

ST. LOUIS, OCTOBER 1, 1868.

Death of Prof. Joseph N. McDowell.—It is with sincere regret that we have to announce the death of this eminent surgeon and medical teacher. He died on the 25th day of September, from a congestive chill. Although active and as full of energy as in the days of his youth, he had reached the age of sixty-three years.

We append the preamble and resolutions of the Faculty of the Missouri Medical College:

At a meeting of the Faculty of the Missouri Medical College, held on Friday evening, September 25, to take action in reference to the death of Prof. Joseph N. McDowell, the following resolutions were submitted by Prof. John S. Moore, and unanimously adopted by the Faculty:

1. That it is with unfeigned sorrow that we have to record the sudden death of our venerable friend and colleague, Prof. Joseph N. McDowell, with whom we have been so long associated.

2. That in the death of Dr. McDowell this Institution has lost not only its founder, but one who has devoted his entire life and energies to the cause of medical education in the West; the profession of surgery one of its brightest ornaments, and the community an honored and useful member, one whose ear was ever open to the cry of the distressed, and whose hand was ever ready to alleviate the sufferings of humanity.

3. That we tender to the widow and family of the deceased our sincere sympathies.

4. That, as a mark of respect, we will attend his funeral in a body.

5. That a copy of these resolutions be signed by the Secretary, and sent to the family of the deceased, and published in the papers of the city.

Dr. McDowell was a man of kind impulses and a charitable disposition. He was quick in temper, outspoken as to his personal opinions, which, in some particulars, were peculiar. He

had a clear, vigorous and gifted intellect, analytical and experimentive. He had a genuine professional enthusiasm, and great steadiness and daring in rare and difficult surgical operations. He was an original man, not easy to understand thoroughly, and when understood, not easily forgotten. He did not achieve a great fortune in this city, but Dr. Joseph N. McDowell, with his strongly marked character, will retain a place in the historic records of St. Louis.

The Medical Schools.—Introductory lectures have commenced in our medical schools, and the regular course in all will begin before our next issue. We would call the attention of students to the favorable position of our city, and the great facilities offered by the medical institutions of St. Louis. Both the Missouri and St. Louis Medical Colleges have greatly added to their museum, and have clinical advantages not surpassed, if equaled, by any city in the West. Anatomical material is also abundant; so that the student can not fail, if desirous and attentive, of receiving all the knowledge possible to aid him in his preparation for the duties of his profession. From every present indication we have the promise of largely increased classes this winter. We shall at all times be pleased to have students call at our office, and any information on medical matters will be cheerfully given, also catalogues of medical books and publications open for inspection and reference.

The Lancet refers to the hair "washes" or "restorers" now so much in vogue, as a possible source of serious disease. The color-restoring agent in these nostrums is lead, and, in view of the very minute quantity of this substance which suffices to poison some individuals, the editor remarks that they run "no inconsiderable risk of finding the 'restoration' of their hair attended by loss of power in their wrists."

THE **St. Louis Medical Reporter,**

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OSCAR F. POTTER, M. D.

VOL. III.

ST. LOUIS, OCTOBER 15, 1868.

No. 16.

INDIGENOUS REMEDIES OF THE SOUTHERN STATES WHICH MAY BE EMPLOYED AS SUBSTITUTES FOR SULPHATE OF QUININE IN THE TREATMENT OF MALARIAL FEVER.

By JOSEPH JONES, M. D., Professor of Chemistry in the Medical Department of
the University of Louisiana, New Orleans, La

NO. 10.—VIRGINIA SNAKEROOT (*ARISTOLOCHIA SERPENTARIA*).

Botanical Description.—Leaves cordate, oblong, acuminate; stem flexuous; peduncles radical; lip of the corolla lanceolate. Root perennial, composed of many filiform fibres, pungent and aromatic. Stem six to eight inches high, herbaceous, pubescent, erect, geniculate and knotty at base, as if formed of the remains of older stems. Leaves few, oblong lanceolate, slightly acuminate, a little hairy, cordate at base. Flowers few, at the base of the stem, laying on, or sometimes under, the surface of the earth. Peduncles one flowered. Corolla ventricose at base, slightly three cleft at summit; one lobe extended, lanceolate. Grows in dry soils. Flowers in summer.—*Elliott's Sketch of Botany of South Carolina and Georgia. Vol. 2, pp. 511-513.*

Geographical Distribution.—Middle and Southern States. The most northern situation from which Dr. Bigelow received specimens was from the vicinity of New Haven. There are many varieties, and, according to some botanists, several species, confounded in the market under the common name of *Aristolochia Serpentaria*. In a medical point of view this confusion of species is of no consequence, as they are almost entirely identical in properties and remedial action.

Chemical Constitution.—According to Bucholz, who analyzed the root in 1807, 100 parts contain—

Volatile oil	0.50
Greenish, yellow, soft resin.....	2.85
Extractive matter.....	1.70
Gummy extractive.....	18.10
Lignin.....	62.40
Water....	14.45
	100.00

It was again examined by Chevallier in 1820, and found to consist of volatile oil, resin, extractive starch, ligneous fibre, albumen, malate and phosphate of lime, oxide of iron and silica.

Grassman obtained only half an ounce of volatile oil from one hundred pounds of the root, which he describes of a yellowish color, strong odor, and moderately strong taste, and compares the odor and taste to those of valerian and camphor combined.

The bitter principle, termed *extractive* by Bucholz and Chevallier, is very bitter, slightly acrid, soluble in both water and spirit; its solution, which is yellow, is rendered brown by alkalis, but is unchanged by ferruginous salts. The root communicates its qualities both to spirit and water, but most to the former.

Dr. Jacob Bigelow subjected a quantity of the root to distillation for one hour, and obtained in the receiver a whitish, pearly fluid, very strongly impregnated with aroma, but less bitter than the root. On standing twenty-four hours, this fluid deposited around the edges of the surface a considerable number of small white crystals, which proved to be pure camphor. They were inflammable, fusible with a sudden, and volatile with a gradual, heat.—*American Medical Botany*, p. 85.

Dr. C. Conwell,* more than thirty years ago, announced the discovery in this root of a new alkaloid principle, for which he proposed the name of *Sepentara*. It forms in a defined crystallized mass, of a bitter taste, and possesses all the alkaline properties. The sulphate crystallizes in quadrangular prisms, terminated in inclined facets. The hydrochlorate of *serpentara* forms brilliant plumose fibrils. Both these salts are insoluble, except in an excess of acid. The preparation is the same as that by which quassia is obtained. This principle may be the same as the yellow, bitter principle of Chevallier, which he considered as analogous to the bitter principle of quassia.

Medical Properties and Uses.—The experiments of Jörg and his pupils established that, in small doses, it promotes appetite, in large doses it causes nausea, uneasy sensations in the stomach,

**Manual of Materia Medica*, by H. M. Edwards and P. Vavasseur, M. D. Translated by J. Tongo, M. D., and E. Durand. p. 188. Philadelphia: 1890.

flatulence, and more frequent, but not liquid, stools; after absorption it increases the frequency and fullness of the pulse, augments the heat of the skin, and promotes secretion and excretion, and in very large doses causes disturbance of the cerebral functions, producing headache, sense of oppression within the skull, and disturbed sleep.

Snakeroot is said to have been in common use among the Indians at the time of the arrival of the first settlers, and was much esteemed by them as a remedy in snake bites. The early colonists soon adopted it as an excellent tonic and stimulant, and it is to this day extensively employed as a domestic remedy in fevers, and in debilitated states of the system. It has been employed and extolled by numerous physicians, and it will be profitable for us to review the testimony of several of the most intelligent and extensive American practitioners. Dr. Chapman considers the *Serpentaria* as possessing the mixed qualities of a stimulant and tonic, with active diaphoretic and diuretic properties.

"Among the more early uses of the medicine was its application in the cure of intermittent fever. Whether it is adequate alone to this purpose does not clearly appear, but it certainly proves an important adjuvant. It was used by Sydenham, in conjunction with wine, to prevent the recurrence of the paroxysm, and, from his account, not without advantage. As a general rule, he says, that in all cases where it is expedient to combine wine with bark, the effect will be much increased by adding *Serpentaria*. The correctness of this observation has been fully confirmed by subsequent experience, and it is now very much the practice to unite these articles in the low states of disease.

"To remittent fever, *Serpentaria* seems to me to be best adapted. It has here, in many cases, an indisputable superiority over the bark, inasmuch as it is rarely offensive to the stomach, and may be given, without injury, in those obscure states of the disease where the remission is not readily discernible. As a popular remedy, more particularly, it is much employed in the secondary stages of pleurisy. After bleeding, it is the practice, in

many parts of our country, to resort to a strong infusion of this article, with a view to exciting perspiration, and the result is said to be generally favorable. Catarrhs, rheumatisms, and other winter affections, incident to rustic life, are managed in the same way. It is also a noted remedy in dropsey, to which, I should presume, it is adapted, and especially if the case be of an intermittent type.

"In that species of pleurisy which is properly enough designated by the epithet bilious, I have repeatedly had occasion to recur to the *Serpentaria*, and always with more or less utility. I know not, indeed, any modification of disease in which it displays its power more advantageously. The bilious pleurisy has all the characteristics of pneumonic inflammation, with the addition of some of the symptoms incident to autumnal fever. There is considerable headache, much gastric distress, and almost always violent vomitings of bile. It differs also from ordinary pleurisy in having less activity of inflammation, and consequently in not bearing the same extent of depletion. The system, indeed, will often be very evidently depressed by one or two bleedings. In this case, the practice which has been commonly pursued is, after the removal of a comparatively small portion of blood, and the thorough evacuation of the alimentary canal, to administer draughts of the infusion of *Serpentaria*, in order to excite copious diaphoresis. As an epidemic, the bilious pleurisy prevailed in the neighborhood of this city many years ago, and, I am informed, was managed most successfully by the practice which I have detailed. It is not, however, one of the ordinary complaints of the climate of the middle States. The cases which I have seen of it have, for the most part, occurred in persons coming from districts of country exposed to marsh exhalation, and who have previously had autumnal fever. I have only one more remark to make on the properties of this article, which is, that it is admirably suited to check vomitings, and to tranquilize the stomach, particularly in bilious cases. It is given for this purpose in infusion, in the small dose of half an ounce or less at a time, and frequently repeated."*

Elements of Therapeutics and Materia Medica, by N. Chapman, M. D., &c. Philadelphia: 1822. Vol. 2, pp. 432-436.

Dr. John Eberlie thus testifies to the action and medicinal value of Virginia Snakeroot :

"When taken into the stomach, it increases the force and frequency of the pulse, excites a glow of heat throughout the system, and produces pretty copious diaphoresis. It is not, however, simply stimulant and diaphoretic in its effects, for along with these qualities it possesses very important tonic powers.

"Possessing, along with its tonic, pretty powerful stimulant properties, the Snakeroot is peculiarly suited to fevers of a low grade of excitement; on the other hand, however, it can never be employed without danger when blood-letting is indicated.

"In every variety of fever, however, when the system is sinking into a typhoid state, the Snakeroot is a remedy of unquestionable utility. It is especially serviceable in the latter stages of febrile diseases, when the skin and tongue remain dry and hot, and the pulse is feeble and frequent. When given in this state, it commonly excites a general diaphoresis; the tongue becomes moist, and the pulse and the general powers of the system are invigorated.

"A good deal has been said in favor of the powers of the *Serpentaria* in putrid fevers, and, from the general properties of this remedy, there can be little doubt of its applicability to the treatment of fevers of this kind.

"The Snakeroot was formerly much employed in intermittents. Of its efficacy, however, in the cure of this disease, when administered by itself, not a great deal can be said. I have employed it in some instances, but always without success, and I am inclined to believe that it is not often capable of arresting the disease. When united, however, with bark, or some of the bitter tonics, it seems to increase their efficacy, and it is in this way that it is now commonly employed in intermittent and remittent fevers. It is particularly useful with Peruvian Bark in those intermittents where the system is depressed and sluggish during the intermission, with a small and feeble pulse, and a cold and dry state of the surface of the body.

"During the prevalence of the late epidemic pneumonia

typhoids in this country, the *Serpentaria* was much prescribed by some physicians. Being at once stimulant, diaphoretic and roborant, it was particularly calculated to produce beneficial effects in this disease, by equalizing the circulation, and imparting vigor to the vital powers.

"Dr. Dyckman states that he has prescribed the Snakeroot in combination with Seneca with marked advantage in this disease. It may also be employed with advantage in the latter stages of pneumonia and bronchial affections, being useful not only by its tonic operation, but chiefly, perhaps, by exciting the cutaneous emunctories, and thereby relieving the pulmonic system. The infusion of Snakeroot may be used with advantage as a gargle in ill-conditioned ulcers of the throat."—*Treatise on Materia Medica and Therapeutics*, by John Eberlie, M. D., &c. Philadelphia: 1830. Vol. 1, pp. 258–259.

The following is the testimony of Dr. Jacob Bigelow :

"Medicinally considered, *Serpentaria* is a tonic, diaphoretic, and, in certain cases, an anti-spasmodic and anodyne. It has been abundantly used in fevers of various descriptions, and has been commended by a host of medical writers. There is no doubt that it has been injudiciously employed in many cases in fever attended with an active pulse and inflammatory diathesis. The early stages, also, of febrile diseases rarely admit the exhibition of so decided a stimulant without injury. But in the advanced stages of fever, and those attended with typhoid symptoms, this medicine is resorted to with great advantage, both alone and in combination with other tonics and stimulants. It is peculiarly useful in supporting the strength, and in allaying the irregular actions which attend great febrile debility, such as subsultus tenderium, delirium, watchfulness, &c. Its bitter ingredients, and the camphor which it contains, no doubt, contributed to these effects. It is most advantageously given in combination with bark, or with wine and opium."—*American Medical Botany*. Vol. 3, p. 86.

Dr. George B. Wood, in his valuable work on *Therapeutics and Pharmacology*, considers Virginia Snakeroot as simply tonic and stimulant to the circulation, with a tendency to pro-

duce perspiration, generally acceptable to the stomach in moderate doses, and probably without special influence on the brain or nervous system. "It may be employed in *pure dyspepsia*, attended with a degree of debility calling for something more stimulating than the simple bitters, and especially when there is a disposition to dryness of the surface; but its most appropriate application continues to be that for which it was early recommended, to the treatment, namely, of *fevers of a low or typhoid character*. Whenever any febrile disease begins to exhibit this tendency, and stimulation is demanded, *Serpentaria* is one of the first medicines to which we may have recourse, provided the stomach be wholly free from inflammation or vascular irritation. It may be used, therefore, with the condition of stomach mentioned, in typhus or typhoid fever when passing from the first stage of excitement into that of debility, in protracted remittent fever assuming a low character, in typhoid pneumonia, and in smallpox, scarlatina, malignant sore throat, and erysipelas, under similar circumstances. But it should be understood that, in none of these affections, does it possess any specific curative powers, that it can act merely as a tonic and gentle stimulant, and that it should be used only as an adjuvant in very serious cases, being alone wholly incompetent to the support of the system under powerful depressing influences. In many of these cases it may be very properly associated with Peruvian bark or quinia.

"From my own observations, I should infer that *Serpentaria* possesses no peculiar antiperiodic power, and that it can not, therefore, be relied on for breaking the course of an intermittent or remittent fever; but in either it may be conjoined with sulphate of quinia when the system is feeble, and the stomach somewhat insusceptible. The association of Peruvian bark has long been a habit among practitioners. It exists in the compound tincture of Peruvian bark of the British and American Pharmacopœias, better known under the name of Huxham's tincture of bark."*

*A Treatise on Therapeutics and Pharmacology, or Materia Medica, by George B. Wood, M. D., &c. Philadelphia: 1856. Vol. 1, p. 303.

I have employed Virginia Snakeroot in conjunction with quinia and brandy in the treatment of numerous cases of the various forms of malarial fever. As the results of these observations have been laid before the profession,† we shall merely state that, whilst it has proved a valuable stimulant, diuretic and diaphoretic, we do not believe that it is, by *itself*, capable of arresting, as a general rule, the more violent forms of malarial fever.

Administered in conjunction with sulphate of quinia, brandy and carbonate of ammonia, I have derived great benefit from it, as well as from the other remedies, in the several forms of malarial fever, when the pulse is rapid and feeble, beating from 120 to 160 times in a minute, and feeling like the vibrations of a delicate silver thread; when the heart thumps feebly and spasmodically and rapidly against the walls of the thorax; when the respiration is full, panting, labored, varying from 30 to 50 in the minute; when the skin is hot, and parched, and rough, or bathed in a cold, clammy sweat; when the temperature of the extremities is far below that of the trunk, which by no means corresponds with the increased efforts at the introduction of oxygen; when the circulation of the blood in the capillaries of the extremities is almost entirely checked; when the chemical changes of the solids and fluids are in a great measure arrested and perverted, and the development of the nervous and physical forces arrested, and their correlation disturbed; when the altered blood stagnates in the capillaries of the brain, and the intellect is either abnormally excited or depressed; when the altered blood stagnates in the capillaries of the tongue and stomach, and the brilliant red, dry, rough tongue is but a fit index of the consuming thirst of the restless patient, tossing from side to side, and pleading for a drop of water. In such cases, if brandy and Snakeroot be used alone, the beneficial effects will be only temporary. To be permanent, some powerful antiperiodic, as sulphate of quinia, should be combined with the stimulants.

†Observations on some of the Physical, Chemical, Physiological and Pathological Phenomena of Malarial Fever, by Joseph Jones, M. D. Transactions of the American Medical Association. Vol. 12. 1869. Southern Medical and Surgical Journal. 1868.

The effects of carbonate of ammonia in such cases, although powerful, are in like manner evanescent, unless combined with large doses of the sulphate of quinia. If we should at any time be deprived of quinine, and are compelled to rely wholly upon the indigenous remedies, I should recommend in such cases the combination of large doses of Brandy, Carbonate of Ammonia, Virginia Snakeroot, Dogwood, Georgia bark, Poplar and Magnolia bark. We would thus obtain the stimulant diuretic, diaphoretic and antiperiodic virtues of several remedies, in a condition of the system when we need not merely active stimulation, but the excitation of the process of excretion, in all the structures and organs by which the morbid agents and offending products may be eliminated. I have also derived much benefit from the tincture of Snakeroot in the debilitated state of the system succeeding remittent fever. In such cases it is most beneficial when administered in conjunction with citrate of potassa or carbonate of soda. The latter remedies act in conjunction with the diuretic properties of the Snakeroot.

Dose of the powder, 10 to 40 grains.

The infusion, made in the proportion of half an ounce to a pint of boiling water, may be administered in the dose of one to two fluid ounces, repeated, in chronic cases and where we wish more especially a tonic effect, three or four times a day; in fever, where we wish a more decided effect, it may be administered every half hour, or at longer intervals, according to circumstances.

The tincture, prepared by macerating for fourteen days three ounces of powdered Snakeroot in two pints of diluted alcohol, and filtering, or more rapidly in two days by the use of the displacement apparatus, may be administered in the dose of one to three fluid drachms. In the treatment of malarial fever, the properties may be conveniently obtained and combined with a suitable stimulant by pouring one pint of brandy on one ounce of the roots. One tablespoonful of this may be administered every hour, or more seldom, according to the urgency of the symptoms. In congestive fever it may be administered every half hour until reaction takes place. Of course the maximum

dose of stimulants here stated, would be used only to meet special indications, and not, as a general rule, as a prolonged treatment.

Dr. Eberlie recommends the following mixture as very useful in the dyspeptic affections of infants :

R.—Pul. serpentariæ.

Magnes. albi aa. gr. xvj.

Pulv. Rhæi. gr. xij.

M.—Divide into six equal parts.

Huxham's tincture of bark (compound tincture of Peruvian bark) is prepared by macerating two ounces of Red bark in powder, one ounce and a half of Orange peel, three drachms of bruised Virginia Snakeroot, cut Safron, and rasped Red Saunders each one drachm, in twenty fluid ounces of diluted alcohol for fourteen days, then expressing and filtering; or more rapidly, with the same formula, in two days, by the use of the displacement apparatus.

NO. 11.—BLACK WILLOW (*SALIX NIGRA*).

This willow, which is the most common of the American willows, and the most analogous to the White Willow (*Salix Alba*), of Europe, is found in all the States from New England to Florida, and west nearly to the foot of the Rocky Mountains.

According to the younger Michaux, the roots of this small tree afford an intensely bitter decoction, which is considered in some parts of the country as a purifier of the blood, and as a preventive and remedy for intermittent fever. The extensive genus of willow, which comprises not less than one hundred and thirty species, which, with a few exceptions, are natives of Europe and North America, is especially worthy of the attention of the physicians of the United States, since in several of the European species a principle resembling quinia has been extracted, and upon a fair trial has been found to possess the properties of quinia. With the exception of the testimony of the younger Michaux, which I have just brought forward, I am not aware that any experiments or medical investigations with reference to the American species have ever been laid before the profession.

NO. 12.—WHITE WILLOW OF EUROPE (*SALIX ALBA*).

Although not indigenous to the United States, the White Willow of Europe has been so extensively introduced that it is worthy of the consideration of physicians, as the source of the alkaloid salicin.

Chemical Composition.—According to MM. Pelletier and Caventou, the bark of the *Salix Alba* contains bitter, yellow coloring matter, green fatty matter, similar to that found in cincona, tannin, resinous extract, gum, wax, woody fibre, and a magnesian salt containing an organic acid. These chemists failed to isolate the most important of all its ingredients, salicin, which was most probably mixed with the bitter, yellow coloring matter. Subsequently, in 1828, Buchner, of Germany, discovered a peculiar alkaloid principle, which has since been discovered in fourteen species of *Salix* and eight species of *Populus*. M. Fontana and Rigatelli, of Italy, discovered this principle shortly after Buchner. M. Leroux, of France, appears to have been the first to accurately investigate its properties. When pure, Salicin presents itself as a white, shining, slender, inodorous, very bitter crystal; insoluble in ether and oil of turpentine, soluble in alcohol, much more soluble in boiling than in cold water; having the composition of C 42, H 29, O 22.

According to Merck,* it may be prepared in the following manner:

“Dried or fresh willow bark is cut small, and exhausted by repeated boiling with water. The decoctions are concentrated, and while boiling treated with litharge till the liquor appears nearly colorless. The dissolved oxide of lead is removed, first by sulphuric acid, afterwards by sulphuret of barium, and after the separation of sulphuret of lead, evaporated, when salicin crystallizes, and is purified by repeated solution and crystallization. From willow bark, which is fresh and rich in salicin, it may be obtained by cautious evaporation of the cold aqueous infusion. The oxide of lead removes from the solution gum, tannin and extractive matter, which would impede the crystallization of the salicin. It also combines with the salicin, forming

*Turner's Chemistry. Seventh edition. Page 816.

a kind of salt, which is decomposed by the sulphuric acid and sulphuret of barium. If the latter be carefully added, neither sulphuric acid nor baryta remain in the solution; and the sulphuret of lead, which, separated, acts as a displacing agent."

Medical Properties and Uses.—The ancients are said to have employed the bark of the willow in the treatment of disease; it fell into disuse, however, until 1763, when it was brought into notice by the Rev. Mr. Stone, who published in the Philosophical Transactions of the Royal Society of London an article entitled "On the Success of the Bark of the Willow in the Cure of Agues, by the Rev. Edm. Stone, of Clipping—Norton, Oxfordshire." Dated April 25th, 1763. As his observations are exceedingly interesting at the present time, we shall present a condensed view of them:

"About six years prior to 1763, Mr. Stone tasted the willow bark, and was surprised at its extraordinary bitterness, which immediately raised in him a suspicion of its having the properties of Peruvian bark. As this tree delights in a moist, wet soil, where agues chiefly abound, the general maxim that many natural maladies carry their cures along with them, or that their remedies lie not far from their causes, was so very apposite to this particular case, that he could not help applying it; and that this might be the intention of Providence, he owns, had some weight with him. The plenty of this bark furnished him, in his speculative disquisitions on it, with an argument both for and against these imaginary qualities of it; for on the one hand, as intermittents are very common, it was reasonable to suppose that what was designed for their cure should be as common, and as easy to be procured. But, then, on the other hand, it seemed probable, that if there was any considerable virtue in this bark, it must have been discovered from its plenty. His curiosity prompted him to look into the dispensatories and books of botany, and examine what they said concerning it; but there it existed only by name. He could not find that it ever had any place in pharmacy, or any such qualities as he suspected ascribed to it by botanists. However, he determined to make some experiments with it; and for this purpose he

gathered that summer near one pound weight of it, which he dried in a bag, on the outside of a baker's oven, for more than three months, at which time it was to be reduced to a powder by pounding and sifting, after the manner that other barks are pulverized.

"It was not long before he had an opportunity of making a trial of it; but, being an entire stranger to its nature, he gave it in very small quantities—he thinks it was about twenty grains of the powder at a dose, and repeated it every four hours between the fits, but with great caution and the strictest attention to its effects. The fits were considerably abated, but did not entirely cease. Not perceiving the least ill consequences, he became bolder with it, and in a few days increased the dose to two scruples, and the ague was soon removed. It was then given to several others with the same success; but he found it better answered the intention when one drachm of it was taken every four hours in the intervals of the paroxysms.

"He had continued to use it with success, as a remedy for agues and intermitting disorders, for five years successively. It had been given, he believed, to fifty persons, and never failed in the cure, except in a few autumnal and quartan agues, with which the patients had been long and severely afflicted. These it reduced in a great degree, but did not wholly take them off. The patient, at the usual time for the return of the fit, felt some smattering of his distemper, which the incessant repetition of these powders could not conquer. It seemed as if their power could reach thus far and no farther; and he supposed that it would not have continued to reach so far, and that the distemper would have soon returned with its pristine violence, but he did not stay to see the issue. He added one-fifth part of the Peruvian bark to it, and with this small auxiliary it totally routed its adversary. It was found necessary also in one or two obstinate cases, at other times of the year, to mix the same quantity of that bark with it; but there were cases where the patient went abroad imprudently, and caught cold, as a post-chaise boy did, who, being almost recovered from an inveterate tertian ague, would follow his business, by which means he not

only neglected his powders, but, meeting with bad weather, renewed his distemper.

"One-fifth part was the largest, and indeed the only, proportion of the quinquina made use of in this composition, and this only on extraordinary occasions. The patient was never prepared, either by vomiting, bleeding, purging, or any medicines of a similar intention, for the reception of this bark, but he entered upon it abruptly and immediately, and it was always given in powders, with any common vehicle, as water, tea, small beer, and such like. This was done purely to ascertain its effects, and that he might be assured the changes wrought in the patient could not be attributed to any other thing; though had there been a due preparation, the most obstinate intermittents would probably have yielded to this bark without any foreign assistance; and by all he could judge from five years' experience of it on a number of persons, it appeared to be a powerful absorbent, astringent and febrifuge in intermitting cases, of the same nature and kind with the Peruvian bark, and to have all its properties, though perhaps not always in the same degree. It seems likewise to have this additional quality, viz. : to be a safe medicine, for he never could perceive the least ill effects from it, though it had always been given without any preparation of the patient. The tree from which this bark was taken is styled by Ray, in his Synopsis, *Salix Alba Vulgaris*, the common White Willow."

Messrs. James, White and Wilkenson published strong evidence in favor of the use of the broad-leaved willow in intermittents, foul ulcers, debility, and other affections. Dr. Cullen recommends the willow bark in his *Materia Medica* as a substitute for cinchona. Haller was in the habit of using with success a decoction of this bark as a bath to dip weakly infants in. Dr. Closs affirms that the bark of the willow given in the dose of a scruple every three hours has cured many cases of intermittents and bad scorbutic ulcers. Numerous other English physicians have testified to its value in intermittents, and its great value as a substitute for Peruvian bark is established beyond all doubt.

The testimony of numerous European physicians show that the active principle of willow bark, salicin, is capable of arresting and curing intermittent fever, and stands next to quinine as an antiperiodic remedy.

According to Buchner, twelve grains, in divided doses, will generally arrest ague, and Magendie affirms that he saw fevers cut short in one day by three doses of six grains each.

The dose of the bark in powder ʒss to ʒij. The infusion or decoction, prepared with one ounce of the bark to one pint of water, may be administered in doses of from one to four fluid ounces.

Salicin should be administered in the same manner, and to accomplish the same objects, as quinine, but in larger doses. From ten to forty grains may be administered every three hours.

NO. 13.—CATALPA (*BIGNONIA CATALPA*)—*Linn.*

In a thesis supported at the Medical Department of the University of Pennsylvania, the bark of the Catalpa was maintained to be tonic, stimulant, and more powerfully antiperiodic than the Peruvian bark. I have been unable, after careful research with the best authorities, to find any facts which bear either upon the chemical constitution or the tonic, stimulant and antiperiodic properties of the bark of the Catalpa. Physicians should exercise caution in their experiments with it, because it is generally believed to be poisonous. When the bark is wounded, a very unpleasant, and, according to the testimony of some, a poisonous, gas is emitted; and it has been stated, on good authority, that the honey collected from its flowers is poisonous, producing effects analogous, though less alarming, than those produced by the honey collected from the yellow jasmine of Carolina.

The seeds have been employed by several practitioners of continental Europe in asthma. M. Antomarchi recommends for this purpose a decoction made by boiling twelve ounces of water with three or four ounces of the seeds down to six ounces, the whole to be given morning and night.

NO. 14.—*GENTIANA QUINQUEFLORA* (INDIAN QUININE)—AGUE
WEED.

Dr. E. P. Wood, of Wisconsin, has given this plant with success in a number of cases of intermittent fever, and he states that it is used extensively in domestic practice.—*Trans. Illinois State Medical Society*, 1857.

NO. 15.—*PERSIMMON* (*DYOSPYROS VIRGINIANA*)—*Mich.*

Breckel, in his History of North Carolina, says that the inner bark has been used with success in intermittent fever.

As far as our information extends, this interesting statement remains to be verified. It is well known that its tonic and astringent powers have proved exceedingly valuable in the treatment of affections of the bowels,* hemorrhage and ulcerated sore throat.† There are many stages and complications of the different forms of malarial fever where these tonic and astringent properties would fill most important indications, for malarial fever, as is almost always the case in China, is frequently accompanied with derangement of the bowels.

M. SAPPY'S MICROSCOPICAL EXAMINATIONS have shown that in one healthy ovary, the number of ovisacs and ovules is more than 800,000, making about 700,000 for the individual. He therefore calculates, that if all the ova existing in the surface of the ovaries of a young woman eighteen or twenty years of age were to be fecundated and undergo all their phases of development, it would require but one woman to populate four such cities as Lyons, Marseilles, Bordeaux and Rouen; and but two to furnish inhabitants for a capital like Paris, containing 1,600,000 souls.—*Caseaux*.

*On the Use of the Unripe Fruit of the *Dyospyros Virginiana*, as a Therapeutic Agent, by John P. Mettner, M. D., of Virginia. *The Am. Jour. of Med. Science*, October, 1842, p. 297. *Am. Jour. Phar.*, XII, p. 161. Woodhouse, in *any Dis.*

†Dr. B. S. Barton's Collections, Vol. II.

HYPODERMIC THERAPEUTICS.

[SECOND ARTICLE.]

By Z. C. McELROY, M. D., President Muskingum County (Ohio) Medical Society.

In the number of the *MEDICAL REPORTER* for October 1, and containing my first article on the introduction of medicines into the human system by subcutaneous injection, is inserted an article from the *London Medical Times and Gazette*, by F. Woodhouse Braine, Surgeon, entitled "Unusual Effects of Subcutaneous Injection," upon which it is my purpose to offer some criticism.

It does seem singular that at the great centers of medical knowledge, as in London, the effects of medicines should not be better understood. If they were, Surgeon Braine would never have injected 1-3 gr. morphia, as detailed in his communication to the *Medical Times and Gazette*; and if he had not, there would have been no occasion for him to write about its unusual effects. After carefully reading Surgeon Braine's case, it is the deliberate judgment of the writer that there is nothing unusual about it, except the excessive dose used by him. The strength of the solution, to-wit: about 45 grains of morphia to the ounce of water, will most certainly be found altogether unusual with those who have had any experience in the use of the hypodermic syringe. Given the conditions, including the patient herself, and repeat Surgeon Braine's procedure with the hypodermic syringe, and the same results will follow sufficiently often to induce any thoughtful practitioner to go over the matter in his mind most carefully, and try to find out if the results are due to anything connected with his mode of administering the agent.

In my first article it was stated that the effect of morphia is to bring the organic processes of life, nutrition and waste, to a comparative standstill. In Surgeon Braine's case this was fearfully true. His closing sentences state that "there was no feeling of nausea, and no attempt at vomiting," which is certainly true. The acts of nausea and vomiting require power, or force, to execute them. His dose of morphia suspended destructive metamorphosis in the brain and nerve centers furnishing the

dynamics for the play of the lungs, as well as the motor power (dynamics) of the heart. How could her breathing be else than difficult, her pulse irregular, and her face pale, and, it may be added, the patient at the very verge of death? Dead people don't vomit or have nausea. Could any of the magnificent steamers of the Mississippi come into or go out of your port without fuel, or with fuel not in a state of ignition (destructive metamorphosis), under, in, or in such proximity to her boilers as to raise water into vapor or steam? Suppose, at a moment when the full power of her machinery was urgently needed, the firemen should suddenly cut off all draught, would not her fires go out and her machinery come to a standstill, comparatively? These inquiries can only be answered affirmatively. Now, human dynamics, or, if you please, all organic dynamics, can only be manifested when destructive metamorphosis is proceeding in the nerve masses; that is, when certain portions of the nerve masses are undergoing the process of reduction to lower states of organization. It is this act which gives rise to organic dynamics all through the wide range of organic life. Now, what morphia does, is to arrest this process of reduction, just as the cutting off all draught from the fire under the steamer's boiler, or boilers, extinguishes the combustion; and with the arrest of the combustion, there is an arrest of the liberation of power or force, with a staggering of the machinery, as in Surgeon Braine's case. The readers of my first article will recall that it was so distinctly stated, and that the results in Surgeon Braine's case were also foreshadowed in it. The facts in Surgeon Braine's case were, that he used too much morphia, and in too concentrated a solution. Then the acetate of morphia is too unstable a salt for hypodermic use. It undergoes spontaneous decomposition in solution, and is probably decomposed the moment it touches the cellular tissue, after hypodermic injection. Had Surgeon Braine had a philosophical conception of how medicines, and particularly morphia, produce their effects, he would never have used 1-8 gr. in a female, already exhausted by seventy-two hours of intense suffering. Had he used 1-8 gr. or 5-32, in large dilution, no such results would probably

have followed. To your thoughtful readers the suggestion is made, that there is no medicinal agent, that has any valuable therapeutic effect, which does not one of four things: hasten or retard nutrition, or hasten or retard waste (destructive metamorphosis) in the human organism, or for that matter, any other organic organism. If there is anything that does not one of these four things, it is inert; hence it was stated in my first article that the materia medica of the not distant future would be arranged as agents affect the organic processes of life—nutrition and waste—constructive and destructive metamorphosis. The difficulties in the way of breaking up established channels of thought are fully considered, when it is again predicted that in the future there will be only four classes of therapeutic agents; that the ideas connected with agents that puke and purge must give way to more correct conceptions of organic life, as a condition for progress in therapeutical science; that the practice of medicine predicted by Prof. Draper can only be born when the minds of medical men can cut loose from the present classification of therapeutic agents. Let any reader of the MEDICAL REPORTER start out with the idea that organic life consists in the construction of its own peculiar tissues out of other organic material, and the waste of these tissues in such way as preserve or furnish the dynamics of organic life, and as he visits the sick, look and see how his agents influence these processes, and he will soon learn to classify medicinal agents otherwise than as pukes and purges. Suppose for a moment that the materials of any human patient's body were to suddenly assume the gaseous form, as in the case of nitro-glycerine, is there a building so large in your city that would not be destroyed if the body was in it? The laws of organic life make such a thing impossible, and very fortunately so. When a human body is to be burnt up, while alive, it is done through the process of what we call fever in consumption.

But enough has been said to show that Surgeon Braine's "*unusual effects of subcutaneous injection*" were, after all, not so unusual as not to be strictly in accordance with the laws of organic life, and may be confidently predicted in a majority of cases, with like conditions.

CASES OF SUPPOSED HERMAPHRODITES.

The following interesting cases we publish as being the most interesting we have ever seen recorded. The first we find in the *Medical and Surgical Reporter*, reported by Dr. Henry N. Avery, of Poughkeepsie, N. Y.:

A Genuine Hermaphrodite.—The following is such a wonderful case, and being as near a hermaphrodite as anything can be, notwithstanding the evidence that nothing of the kind can exist, I report it for the novelty of the case, rather than the operation.

August 6, 1868, Christie Ann C—— called upon me for advice, giving the following answers to my questions. After stating that she was a native of Nova Scotia, and had just arrived in this city to see a sister living here, and seek surgical aid in the States; unmarried; twenty-four years of age; five feet ten inches high; enjoying comparatively good health; occupied during the past two years in teaching school, and that she had a *growth* upon her privates.

From observation I discovered that she possessed a deep, coarse voice, masculine frame and face; in fact, resembling an ordinary coarse woman.

After a careful examination, to my surprise I found the following to exist: the mamma were undeveloped; the clitoris, resembling a penis in flaccid state, was two inches long, and half an inch in diameter, with well developed gland and foreskin. No orifice was discovered. A vagina two inches deep, well formed, existed, but a close examination per rectum and bladder could not discover any trace of a uterus; the meatus urinarius and vestibule were perfect; the right labium majorum was quite natural and of usual size; the labia minora were traceable, but in the folds of the left labium there appeared a large pendant tumor, resembling the left testicle of a man, with a well developed scrotum of usual size, of some four inches in length, resembling in every respect the scrotum. Tracing what appeared to be the cord up, I found it made its exit from the external abdominal ring, and having every indication of a spermatic cord; the epididymis appeared to be natural; in fact, everything resembled a testicle.

She stated that she felt some sexual desire, and that every morning for the past six years she had vomited, on rising from bed, a small quantity of blood. To my question as to how long the tumor had existed, she stated that she had noticed nothing until she was ten years of age.

Her object in coming to me was, she said, to see if I would remove the tumor, as it annoyed her. The physician at home, the only one she had ever shown it to, stated that he could do nothing for her.

Being placed in somewhat of an embarrassing position, in discovering so much more than I expected to find, I resolved to call a consultation, to see if my diagnosis of a testicle would be confirmed. Accordingly Drs. J. S. P. Lord, E. H. Parker and my brother, Dr. E. W. Avery, all of this city, were called in, when they all agreed that it resembled in every respect a testicle, but the case being so extraordinary that they could not form any diagnosis, but advised an operation.

With the assistance of Dr. Lord and Dr. E. W. Avery, I proceeded to perform the operation, by removing the tumor by the usual process for castration, by making an incision of some five inches in length, so as to expose the cord, which was found with three arteries that were ligated, and several smaller ones, a large nerve, veins, &c.; severing the cord, the retraction was the same that might be expected in performing the operation upon a man; the tumor was then dissected out, the wound partially closed, and the patient placed in bed.

After removal, the tumor was examined by Dr. Lord, Dr. E. W. Avery and myself, with a microscope magnifying 350 times, when cellular structure and convoluted tubes were visible, with rudimentary spermatozoa; in fact, it was declared a testicle.

Mounted specimens of the tubes for the microscope have been prepared, and photographs of the woman will be preserved.

This being the only case, I believe, on record, where a testicle has been discovered in a woman, it will naturally interest many. The fact can now be settled, that such a thing as a hermaphrodite has existed.

The second is the most remarkable case ever observed, and was published in the *Beitruge zur Geburtskunde und Gynækologie and Am. Jour. of Obstetrics*, from which latter journal we have made the selection :

Probable Case of Hermaphroditismus Lateralis.—The question whether hermaphroditismus lateralis actually exists has not yet been decided, as there are no cases on record in which the presence of one ovary and one testicle in the same being could be proved by the microscope. The following case, however, may prove to be one of real hermaphroditismus lateralis :

Toward the end of last year, an *individuum* named Catherine Humann (she having been pronounced a girl by the attending midwife) was received at the gynækological clinic of Wurtzburg, who had already attracted the attention of the medical profession for some time. Her parents are perfectly healthy, and no other malformation happened in the family. She passed the time of her infancy and childhood quietly, without having much desire to join either boys or girls in the plays customary at that age. As soon as she was able to work she was employed in the usual work, being equally skillful in handling the plough and the needle. In her twelfth year the external organs of generation began to be developed; the body, heretofore considered the clitoris, under the outer margin of which the urethra opened, became larger and thicker, the breasts also enlarged as in girls verging towards puberty. At the same time sexual emotions took place, her affections tending toward both sexes, although she seemed to prefer the female sex more. The preference for the latter increased after she began to have seminal emissions, caused, as she says, by dreaming of cohabiting with women. It may be here remarked that she also experienced the feeling of lassitude usually following these nightly emissions. She began, after her sixteenth year, to cohabit repeatedly with women, although she never had a full erection of the penis. After her twentieth year, the functions of the female sex also became developed, for at that time a hæmorrhagic discharge first happened from the urethra, which in the beginning occurred at long intervals, until it finally returned regularly every three

or four weeks, lasting several days each time, when it was considered by herself and others as a menstrual discharge on account of this regularity. She had also all the other symptoms of menstruation occurring before or during this period, a feeling of contraction in the abdomen, general lassitude, and greater sexual excitement. Her breasts also swelled at that time, while a fluid resembling colostrum exuded upon pressure. This symptom, however, ceased upon her fortieth year.

Catherine Humann seemed, since the appearance of this hæmorrhagic discharge, to show herself more susceptible toward the caresses of men than before. Being in her native village considered a girl, wearing female clothing, and having her breasts fully developed, she was, like other girls, courted by the young men, and coitus was even attempted by several, although she did not possess even the trace of a vagina. Yet she always experienced a certain voluptuous feeling, followed by the discharge of a whitish fluid, without, however, an erection of the penis taking place.

The menstrual discharge from the urethra continued regularly every month, lasting from three to six days each time, up to her entrance into the Institute. It failed only during the whole time, after she had become thoroughly wet. In her twenty-sixth year, hair began to grow on her face, which she soon tore out, in order to avoid ridicule. All her other functions were perfect.

Catharine Humann is now forty-two years of age. She wears female clothing, makes, however, the impression of a so-called masculine woman; her features, gait, and voice are those of a man. Her head is normal, the hair is of black color and reaches to the shoulders. Several black and strong hairs are found upon her chin. Her neck and chest are of the male type with the exception of the breasts, which are round and well formed like a woman's. The pelvis is also of the male shape, her limbs want the softness and roundness common to the female sex, every muscle can be traced distinctly as in man. The bones are strong and large.

The external organs of generation are in appearance of the

male type. A well shaped penis of medium size and thickness is at the usual place. It is not perforated, the fossa navicularis terminating in a not very deep cul de sac. The urethra issues on the lower surface, near the end of the glans penis, producing thereby moderate hypospadias. The glans penis and prepuce are otherwise perfectly normal; two tortuous folds run from the lateral margins of the latter towards the mons veneris. The prepuce is perforated in two places, a thread having been inserted for the purpose of performing an operation. She wanted to have all the parts removed, as in her present state she did not belong to either sex.

The scrotum contains on the right side a body resembling in every way a testicle; she feels the well known dull pain upon pressure, while the epididymis can be traced distinctly. The left side of the scrotum is shorter, and contains a body in which neither testis nor epididymis can be traced, and which is said to become thicker during an erection of the penis. A similar lobulated body lies in the left inguinal region. Their nature can of course only be ascertained after death.

Her pelvic cavity was examined very carefully through the urethra and rectum, but nothing abnormal was found, which might indicate the presence of a uterine body.

Although it was already ascertained by a physician that a bloody discharge really issued from the urethra, she was placed under the strictest surveillance, in order to prevent her from practicing any deception. Menstruation had ceased a few days before her reception into the Institute. The orificium urethra and surrounding parts were still bloody, while small clots of coagulated blood were attached to the hair. After eight days an evacuation of semen took place, as, according to her assertion, always happened at that period. This was examined under the microscope and found to be normal semen, containing moving spermatozoa, which established her ability of performing the male functions of generation. The bloody discharge from the urethra was observed at the usual time, preceded by all the symptoms as above described. The microscope proved it to be a normal, fresh human blood, mixed with mucus, as the menstrual blood usually is. These phenomena were twice observed during her stay in the Gynæcological Institute.

ORIGINAL ADAPTATION OF RECEIVED PRINCIPLES OF TREATMENT IN FRACTURE OF THE THIGH; WITH DESCRIPTION AND ENGRAVING OF APPARATUS, AND REPORT OF CASE.

By HENRY S. HEWITT, M. D., Surgeon to Charity Hospital, Late Medical Director U. S. Army, and Department of the Ohio, etc., etc.

In October of last year I was called to a distance in the country to a case of fracture of the left femur in the person of a boy eleven years of age. The injury was the result of indirect violence applied by jumping from a height of fifteen feet. The bone snapped with an audible report, and the thigh nearly doubled upon itself. Much difference of opinion arose among the gentlemen who were first called in, and I found him temporarily arranged with the limb lying on its outer aspect, and extended by the weight and pulley.

Displacement and shortening were present and obvious.

Upon careful consideration of the circumstances, the extreme natural irritability of the subject, the distance, and other minor but influential particulars, it was determined to adopt the starch bandage with constant extension.

The fracture was accordingly put up in the immovable apparatus on the third day. Measurement and inspection gave satisfactory evidence in regard to length and symmetry, extension was applied in the usual manner and the case promised an excellent conclusion. As it progressed, however, it was demonstrated that no power within the capacity of the means at command could control the movements of the child, without injury from undue pressure and constriction. It was discovered that the padding was secretly removed as fast as replaced, and that he had acquired the art of relieving himself from the extending weight at pleasure. There was no surveillance equal to the emergency, and when the dressings were finally removed consolidation had taken place with shortening of three-fourths of an inch, and slight external angular obliquity.

This defective result was by no means in excess of many which are counted good cures; it produced no lameness, and was indistinguishable when the child was dressed.

The attention which the case required, and the difficulties

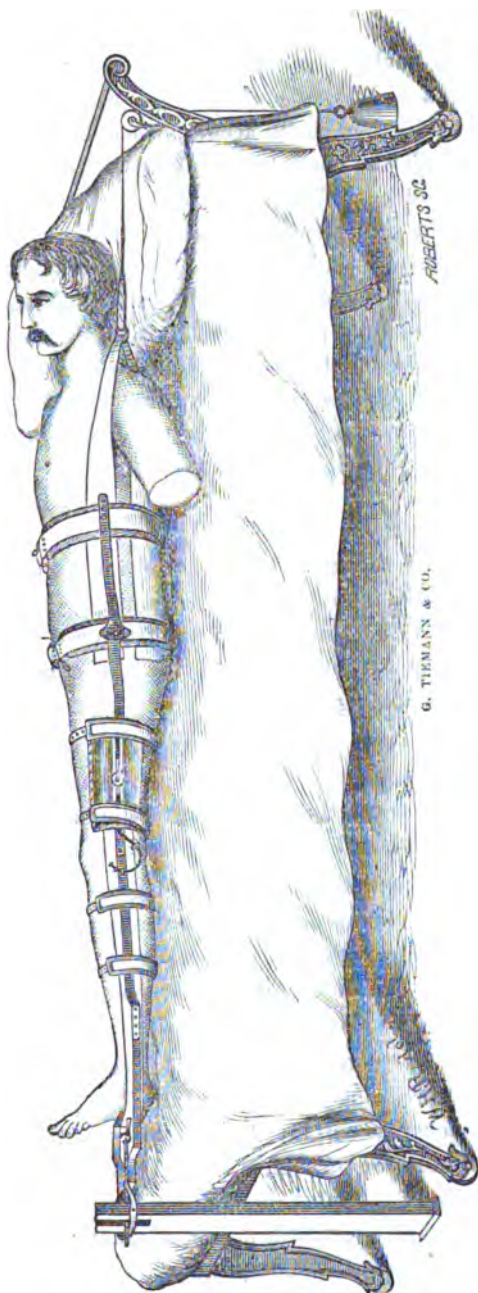
and discouragements by which it was attended, induced much reflection, and I resolved during its progress to adopt on any future occasion the method which I am about to describe.

A few weeks subsequently the little patient fell and refractured the same thigh at the same point. He was brought to the city and again placed under my care. I now caused the new apparatus to be made by Mr. Tiemann, and applied it seven days from the date of the second accident.

It consists of two light flat lateral bars of steel, connected by a cross-bar below the sole of the foot. The exterior bar or splint extends from its angle with the cross-bar, six or eight inches below the foot, to the side of the chest opposite the nipple. Two flat bands of steel well padded secure it to the chest and body. The inner bar reaches nearly to the perineum, but does not impinge, and the floor of the splint is of flexible metal carefully padded by a continuation of the bands which secure it to the limb and buckle in front. The two lateral bars opposite the thigh are fenestrated, and nuts are inserted capable of sliding longitudinally, through which play the screws, which can be used for the exact application of detached molded metallic "splints of coaptation."

Extension and counter-extension are obtained by broad straps of adhesive plaster extending from the groin in front and nates behind, secured by additional bands encircling the body, meeting in a ring at the top of the shoulder, and continued by an elastic cord running over a pulley at the head of the bed, and supporting a weight heavy enough to meet the requirements of the particular case.

Extension is effected and precisely regulated by plaster extending bands connected with a foot-piece to which the screw playing through a hole in the cross-bar is hooked by an elastic loop. The screws are moved by a detached key, which places them beyond the interference of the patient or his friends. The cross-bar is secured to an upright of wood at the foot of the bed, also by elastic straps, to prevent the upper border of the under portion of the splint pressing against the nates when the extending force is exerted.



Everything having been placed in position, counter-extension by means of a weight of eight pounds was employed, and extension carefully but easily accomplished by the screw at the foot. The limb was made to assume its natural length, twenty-four inches and a half, and this degree of extension was preserved without difficulty to the close of the treatment. The result was recovery with perfect restoration of symmetry and length. These desirable conditions have remained unchanged, and the case has been pronounced perfect by disinterested and competent professional judges. Joints are introduced at the hip and knee, which permit passive motion as soon as consolidation has attained a sufficient degree of firmness, or its conversion into a double inclined plane.

APPRECIATION.

It is distinctly recognized that extension and counter-extension are the elements of correct treatment, and that the muscular substance of the thigh, when the fractured ends of a femur are placed in apposition in a right line, becomes a sufficient retaining and coaptating apparatus.

The object of the plan just described is to effect extension and counter-extension easily, safely and effectually. All other parts of the apparatus and details of method are subordinate to this end, or introduced to meet accidental complications.

The detached splints of coaptation can be used in cases of excessive displacement or of double fracture, and to retain the broken ends in apposition by temporary strong pressure, analogous to that of the hands of the surgeon, during adjustments and renewal of the plaster bands.

In many cases their use can be dispensed with entirely, excepting for the reasons just mentioned. The perineal band may be also temporarily employed, and the weight transferred to the foot for occasional relief, if circumstances demand it. All the advantages of the most approved modern methods are combined, with complete control, power of exact regulation, facility of inspection and measurement, and absence of any constriction

or pressure capable of exciting pain or producing ulceration. The only distress experienced is the steady draft upon the muscles, and the constraint of position. The accompanying engraving is a correct representation of the instrument and its application.

Dr. S. H. Hunt, of Eatontown, had direct personal charge of the patient during a portion of the treatment, and Prof. Van Buren was associated throughout in consultation — *Medical Record*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

DISEASES OF CHILDREN. A CLINICAL TREATISE BASED ON LECTURES DELIVERED AT THE HOSPITAL FOR SICK CHILDREN. London. By THOS. HILLIER, M. D. Philadelphia: Lindsay & Blakiston. 1888. [For sale by St. Louis Book and News Company.]

We have been much pleased with the perusal of this book. There is no subject connected with the duties of a physician fraught with more importance than the diseases of children. That the subject is still open to the most serious investigation is evidenced by the very great mortality shown in our reports of children under five years of age. In this city, during the last year, this has been truly frightful. Dr. Hillier states that in London, out of 1,000 children born, 150 die within twelve months, 113 during the next four years, giving 263, or more than a quarter, within five years of birth. During the next five years, he says, 84 die, during the next five years 18 more die; so that at fifteen years of age only 684 of the 1,000 born remain. Of those who survive very many bear permanent marks of imperfect development, of defective nutrition, or of actual disease, due to maladies contracted in early life. This ratio is even greater with us, showing how much remains to be done to remove the cause of such fatality.

The book is based on clinical observation and positive research. The chapters on diphtheria, hydrocephalus, scarlatina and convulsions are especially valuable, and altogether we freely recommend it as one of the best and most practical works we have read on the subject. The publishers have presented it in a very attractive form, on good paper, and large, plain type.

CRIMINAL ABORTION—ITS NATURE, ITS EVIDENCE AND ITS LAW. By HORATIO R. STORER, M. D., and FRANKLIN FISKE HEARD, Esq. Boston: Little, Brown & Co. 1868.

This is a valuable addition to our medico-legal literature; and while in other works we have the subject treated in general terms, we here find condensed, in a plain, practical manner, first, from a medical stand-point, giving all the points of the crime, its frequency, its victims, its perpetrators; the intent, and the real or supposed necessity of the act, together with the obstacles in the way of conviction; and, second, from a legal stand-point, showing the legal bearings of the crime, the common law, and the various enactments on the subject. Altogether it is a complete monograph on this grave subject. Dr. Storer has given much thought and time to the matters involved, and we can safely recommend his work as a faithful guide. We trust it will draw attention to the alarming frequency of the crime, and aid in reducing it.

FOURTEENTH REPORT UPON THE REGISTRATION OF BIRTHS, MARRIAGES AND DEATHS IN THE STATE OF RHODE ISLAND FOR THE YEAR 1868. By EDWIN M. SNOW, M. D., Providence, R. I.

The above work embodies a large amount of valuable statistical matter on the above subjects, which is not only of local, but of general interest. Would that every State had as perfect a system of registration, and as thoroughly carried out, as Rhode Island. Dr. Snow is one of our most reliable and able statisticians, and to his management and perfect system of detail much of the excellence of the work is to be credited.

THE PHYSICIAN'S HAND-BOOK OF PRACTICE FOR 1869. By WILLIAM ELMER, M. D., and ALBERT D. ELMER, M. D. New York: W. A. Townsend & Adams, Publishers.

This valuable little work comes to us much improved for the present year; indeed, it almost amounts to a pocket compendium of practical medicine. The arrangement of the contents is such as to be readily referred to. The daily record is very complete, while the department for accounts is of sufficient volume to easily contain the bills of a large practice. We cheerfully recommend it to our friends. Price \$1 75, to be had of the publishers, 434 Broome street, New York.

M E D I C A L R E P O R T E R .

ST. LOUIS, OCTOBER 15, 1868.

Jacksonville, Illinois, Surgical Infirmary.—We would call especial attention of our readers to the announcement of the first semi-annual report of this most excellent Institution. It is under the control of that eminent surgeon, Dr. David Prince, with able assistants. The Institution is one which we have long felt the need of in the West, and we can unreservedly recommend the above as being in every way worthy of the patronage of those needing surgical aid. Physicians having patients afflicted, could not do better than send them to the above for treatment.

Missouri Medical College.—We see that it is announced that Prof. Paul F. Eve, of Nashville, Tenn., and formerly Professor of Surgery in the University of Nashville, has accepted the chair of surgery in the Missouri Medical College, made vacant by the death of Prof. Jos. N. McDowell. We congratulate the faculty on the addition of Prof. Eve to their number. His reputation is world wide, and as a surgeon and medical teacher he has no superior in the West. We most heartily welcome the Professor to our city, and trust he will see inducements sufficient to make St. Louis his permanent home.

Professor Joseph Jones, formerly Professor of Physiology and Pathology in the University of Nashville, Tenn., has accepted the Chair of Chemistry in the Medical Department of the University of Louisiana at New Orleans. As a writer and investigator in medical science, Prof. Jones stands at the head of his profession, and in his new field, we feel assured, he will receive that welcome that his noble qualities entitle him to.

Prof. Jones will still contribute to the pages of the **MEDICAL REPORTER**, and we hope to hear from him often. Prof. Jones will remove to New Orleans about the first of November.

Catalogues of Medical Books—We have received the new illustrated catalogues of medical books from the well known publishing houses of Lindsay & Blakiston and Henry C. Lea, Philadelphia, both comprising lists of the most valuable works published. Students and others desirous can examine the same, and those of other publishers, as also all late medical works, by calling at the office of the editor.

VITAL STATISTICS OF ST. LOUIS.

For the month of September, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	269	Still Born.....	40
White Females.....	207	Under five years of age.....	259
Colored Males.....	12	Between five and twenty years...	28
Colored Females.....	18	Between twenty and forty years.	111
Born in the United States.....	363	Between forty and sixty years....	71
Born in Germany.....	77	Between sixty and eighty years...	81
Born in Ireland.....	79	Bet. eighty and one hundred y'rs	8
Born in other countries.....	22	Total.....	541

DISEASES.

Apoplexy.....	5	Fever Continued.....	11
Albuminuria.....	1	Fever Typhoid.....	24
Atrophy.....	7	Gangrena.....	6
Asthma.....	8	Gastritis.....	4
Bronchitis.....	9	Hepatitis.....	5
Cancer.....	8	Hydrocephalus.....	6
Carditis.....	4	Hydrothorax.....	1
Cerebritis.....	8	Inflammation.....	7
Cholera Morbus.....	4	Jaundice.....	8
Cholera Infantum.....	45	Laryng'tis.....	1
Convulsions.....	28	Marasmus.....	20
Congestion of Brain.....	10	Meningitis.....	18
Croup.....	8	Mebritis.....	1
Cystitis.....	2	Nephritis.....	2
Cyanosis.....	8	Old Age.....	4
Debility.....	81	Paralysis.....	4
Dentition.....	7	Peritonitis.....	5
Disease of the Heart.....	4	Pertussis.....	8
Diarrhœa.....	19	Phthisis.....	40
Diphtheria.....	2	Pneumonia.....	80
Dropsy.....	8	Premature Birth.....	6
Drowned.....	8	Rheumatism.....	1
Dysentery.....	81	Scarlatina.....	2
Enteritis.....	10	Scrofula.....	8
Epilepsy.....	1	Syphilis.....	2
Erysipelas.....	2	Tetanus.....	7
Fever Intermittent.....	12	Trismus.....	8
Fever Remittent.....	5	Ulceration.....	4
Fever Puerperal.....	1	Wounds.....	7

Total number of Deaths for September, 1866.....1828

Total number of Deaths for September, 1867.....1120

Total number of Deaths for September, 1868.....541

THE
St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

OSCAR F. POTTER, M. D.

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ST. LOUIS, NOVEMBER 1, 1868.

No. 16

**GUNSHOT WOUND RESULTING FATALLY FORTY-FOUR YEARS
AFTER ITS RECEPTION.**

By PAUL F. EWE, M. D., Professor of Surgery in the Missouri Medical College
(Successor to the late Prof. Joseph N. McDowell).

On the 10th of December, 1865, I was consulted by Mr. P., coming from Alabama, then in his sixtieth year, and who gave me the following curious history of his case, revealed then for the first time:

When a youth, in North Carolina, and out gunning, he and a companion quarreled about a dog, which terminated in an extemporaneous duel with their fowling pieces, loaded with squirrel shot. Sixty-four lodged in the left hip of my patient, and one passed through his left hand. Eleven of these little openings could be covered by the palm of the hand, and is proof that they were fired at close range; the injury, too, was so serious as to confine him for some days.

In 1832 my patient moved to Alabama, near the Tennessee river. Some fifteen years ago he first noticed a hard tumor, gradually increasing in size, growing apparently from the left hip, and for the past fifteen months he has had some vesical distress. On examining the case, attention was at once directed to a very large tumor, produced by an expansion, as it were, of the left ilium. It extended in every direction, except posteriorly; reached from near the umbilicus to the pubes on the median line; projected forward, and also laterally to the left

side ; was evidently osseous, and now of several years' duration. A catheter introduced also revealed stone in the bladder.

January, 1860, I performed lithotomy on a son of Mr. P., which may indicate an hereditary predisposition, or location of residence, to the formation of urinary calculus. I think the latter. He was a very large man, having weighed as high as two hundred and sixty-seven pounds, and of strictly temperate habits, except in eating. Deciding that no operation was proper at present, he was sent home, with written directions, hygienic and medicinal, and on the 4th of March, 1866, I learned, through his family physician, that his general health had improved, and he expressed himself so much benefited by the treatment that at one time it was proposed to try and remove the stone by an operation. He still, however, continued to have occasionally pretty severe attacks, which were attributed more to errors in diet than to any other cause ; but with the exception of diarrhœa once, and colic, of which he frequently complained, he was much better. He had passed, too, a gravel, the size of a buckshot, which was quite friable. About this time he unfortunately received a fall, while walking, when the tumor in the left ilium commenced rapidly to increase, with acute pain, and soon nearly filled, as his doctor writes, two-thirds of the entire abdominal cavity. Anasarca followed ; first in the left leg, the side affected, then the right extremity, scrotum, &c., but there was no ascites. Amidst all his sufferings he yet had a morbid appetite, especially for improper food. He had at this period, in addition to his other symptoms, incontinence of urine ; continued to lose flesh ; had obstinate constipation, the fæces passing flattened, or ribbon-shaped ; and he may have died with occlusion of the bowels, for no examination was permitted. This event occurred in March of last year.

Dr. ———, his intelligent family physician, always believed the enormous pubic tumor to be benign in character, the result, as he expressed it, of an effort of nature to repair the damage done by the gunshot wound ; and my own opinion is that this irritation was the *fons et origo* of the cause of his death. Previous to his decease every reasonable effort was made to obtain

an inspection of this immense outgrowth from the ilium when death should occur; and since then I have offered to go hundreds of miles to disinter the remains, but ail to no purpose; nor have my repeated efforts to obtain fuller details of the history of the case been more successful.

In 1832 I recollect seeing a case quite similar to the one just described, which came before the Faculty of the Medical College of Georgia, in Augusta. It was that of a patient, in feeble health, who received an injury on the anterior superior spinous process of the right ilium, and which was, therefore, believed to be the exciting cause of the affection. It was, however, of much more rapid growth than in my patient, for it ran its course in four years.

During its progress the right thigh bone was spontaneously dislocated from the acetabulum by the development of the disease, which finally terminated in ulcerations, spachelus of the integuments, and copious exhausting discharges of most offensive serum and pus. This patient consulted, besides his southern friends, Drs. Mott, McClellan, Hewson and Pattison, but failed to see Dr. Physick, as he was absent from Philadelphia. Dr. S. H. Dickson told him that no surgeon, having any regard for his professional character, would operate on him; and Dr. Mott said, "I would as soon cut your throat to save your life, as to cut that tumor from you with the expectation of saving you." Before death, which took place in four years and a few days after first noticing the iliac disease, he desired to have put on record that opiates alone had given him relief.

The mass of disorganization about the right hip was estimated at 30 to 35 pounds. The tumor itself, when separated, weighed 26 3-4 pounds, and measured 18 3-4 and 25 1-4 inches in its diameters, and 61 inches in circumference. It filled the abdominal cavity, except a small space in the left hypochondrium. The viscera generally were much diseased, reduced in size, and compressed by the outgrowth from the bone. "It appeared to have originated and proceeded from the anterior superior spinous process of the ilium of the right side, and to be closely and firmly attached to the whole of the inner concave surface of

that bone, dipping down and covering the whole internal surface of the pubes, part of the ischium, almost the whole of the sacrum, and adhering on the right side to the whole of the lumbar vertebræ, and from the center of the diaphragm, near the heart, protruding through the abdominal ring below Poupart's ligament, and under the fascia lata of the thigh to within a few inches of the knee. Great care was not taken in dissecting out the tumor, consequently all that part below Poupart's ligament was left untouched in the thigh; and in some places where it was dissected, it was certainly not less than an inch or two thick. The tumor, if we may be allowed the expression, was what might be denominated a fatty tumor, interspersed with osseous granulations of the size of small squirrel shot, some larger. In fact, when cut into, it had very much the appearance and firmness of the fat part of a brisket of beef."

This is the description given of it by Dr. Holloway, of Warrenton, Ga., the family physician of the patient, who deposited the morbid specimen in the museum of the Georgia Medical College, where it may be seen.

PENGHAWAR DJAMBI, OR CHINESE STYPTIC.

By O. F. POTTER, M. D., Professor of Materia Medica and Medical Botany in the St. Louis College of Pharmacy.

This interesting substance, which at one time enjoyed considerable popularity as a styptic, has of late been almost entirely neglected and forgotten. Dr. Waring, in his *Therapeutics*, says that the Penghawar Djambi is the Malayan designation of the lower part of the stipes of a large fern, indigenous in Sumatra, the *Cibotium Schiedei*. While Vogl, who has investigated the subject, says that it consists of the ground stems of certain tree-ferns, the *Alsophila*, *Choonsphora* and *Balantium*, of the island of Java. These stems are covered with hair-like scales, of a bronze or brownish yellow color, which compose the substance in question.

As it occurs in commerce, it is composed of short, hairy-looking threads, matted together, of a brown or blackish yellow

color, and silky lustre, soft and very light. In China and on the island of Java the Penghawar, or Pengwahar Djambi, has long been used as a styptic under the name of *Pakoe-kidang*. According to Vogl it was first imported into Holland from Java some twenty-five years ago, and it was soon introduced into the Dutch Pharmacopæ, and enjoyed so great a reputation as to become an article of considerable commerce.

The French surgeons gave it some celebrity some years ago, and it was then asserted that its power was so great that the most extensive hemorrhage could be instantly checked by its application. But as this was soon found to be untrue, it, like many other valuable remedies, by overrating its virtues, and thereby producing disappointment, soon fell into disrepute and neglect. According to Dr. Vinkle it arrests hemorrhage, even arterial, unless the diameter of the artery be more than one and one-half line, more readily than any other application. He says also that it produces a coagulum, even in cases where the blood has changed so much that it has nearly lost the property of coagulating, or where the walls of the vessels are so diseased that they are incapable of a plastic process, as in carcinomatous and scorbutic ulcers, and that it does not change the vitality of the wound or ulcer, and therefore does not exert an injurious influence on the healing process. He ascribed its power of controlling bleeding to capillarity, the scales being made up of jointed tubes, which absorb the watery part of the blood, and at once swell to five times their natural size. It is also shown that alkaline liquids exert a particularly rapid action on the hair-like scales, dissolving the cell contents, and making the cell membranes swell. Thus these bodies, when applied to a bleeding surface, rapidly abstract the fluid part of the alkaline blood, leaving the fibrin to coagulate. The Penghawar acts better when crumbled than when applied entire, or so that the filaments are directed perpendicularly against the bleeding surface, as then the open cells come more directly in contact with the blood, and are also the better enabled to enter the open vessels and produce compression.

It should be pressed for a few minutes directly on the bleed-

ing surface, after which a compress or strips of adhesive plaster may be applied to keep it in place, care being taken not to draw the wound too closely together. If the bleeding does not proceed from the whole surface of the wound, it is not necessary to fill the entire cavity of the wound or ulcer with the Penghawar, but lint may be added to aid as a compress. Generally from five to twenty-five grains is sufficient for any wound to which it is applicable.

I suggested its use to my friend, Prof. W. H. Eames, of the Missouri Dental College, as useful in cases of excessive hemorrhage following the extracting of teeth, which occasionally becomes so alarming and difficult to arrest, in persons of a hemorrhagic diathesis; and he informs me that he has found it one of the most valuable substances he has ever used for that purpose, and he thinks, that to the dentist, who is familiar with its virtues, it will become one of the indispensables of his office.

After some considerable trial I can safely recommend it in all cases of hemorrhage from small wounds; and in dental operations especially it is worthy of more general use. I would at least advise a fair trial of its virtues.

It may be procured in this city of Mr. F. W. Senewald, druggist, corner of Third and Market streets.

A CASE OF PUERPERAL FEVER TREATED WITH SPONGE TENTS.

Reported by W. A. BYRD, M. D., Lima, Ill.

Sometime during the first part of December, 1867, Dr. J. M. DeBall was called to Mrs. V—, in labor. The patient was a healthy woman, aged twenty-two years, and a primipara. Upon making a vaginal examination, he found the pelvis very much contracted in its antero-posterior diameter (he did not state the actual length of the diameter), with the soft parts smaller and more unyielding than he had ever seen before. After a labor lasting nearly forty-eight hours, she was delivered of a healthy male child, weighing nearly seven pounds.

After delivery the lady appeared to suffer no unusual inconvenience, beyond the prostration that might be expected from a protracted labor. In thirty-six hours the lochial discharge had ceased, and in three or four days more she was taken suddenly ill with a chill, which was followed by general peritonitis.

Dr. DeBall was again called in, when he found the patient with a flushed face, pulse 120 to 140, tongue with a heavy white coat, abdomen excessively tender, the stomach so irritable as not to retain anything but the sulphate of morphia, the bowels constipated. She was so irritable that the least noise, as a heavy footfall in an adjoining room, or the crying of her infant, appeared to cause the greatest agony.

Dr. DeBall called my partner, Dr. J. W. Greenley, in consultation, and the case was treated by them both for about two weeks, when Dr. DeBall was discharged, much against the wishes of Dr. Greenley.

January 5th I was called in consultation, when I found the patient pretty much as described above, with the exception of the fever being of rather a lower grade, and instead of general peritonitis the inflammation had subsided into the pelvis; the nervous irritability was still unabated, and she presented the appearance of one slowly, but surely, sinking into the grave. She had been treated with mercurial purgatives; with sulphate of morphia to allay nervous irritability; blisters had been applied and renewed along the spine; her strength was supported with brandy and beef tea. We tried to substitute morphine with bromide of potassium, but found it ineffectual; we then tried the whole list of sedatives, but had to return to morphine. The former treatment was continued, with the addition of liquor ammoniæ acetatis and the tincture of the chloride of iron.

February 1st Dr. Dorsey was called in consultation. He suggested no change in the treatment, except the addition of ipecacuanha, which was opposed on account of the irritability of the stomach, but tried, and, as supposed, found intolerable. He was discharged.

February 6th Dr. Williams was called in consultation. The patient still sinking slowly. He suggested a change from mor-

phine to chloroform and pills of sulphate of quinine, leptandrin, extract of taraxacum, podophyllin and carbonate of iron. Tried his treatment, but the stomach revolting, he was discharged.

Having a case of dysmenorrhæa that I was treating with sponge tents, I began to reason upon their applicability in other uterine disorders, and suggested to Dr. Greenley their possible efficacy in this case. He, coinciding with my views of the case, introduced one on the 14th of February into the mouth of the womb.

February 15th. Upon examination the tent was found greatly enlarged, and a copious muco-sanguinolent discharge from the uterus. Injections into the vagina twice a day of tepid water, for cleanliness, were ordered, and the tent still retained.

February 16th. The discharge continued as great as the day before, being very dark and fœtid. The patient had perceptibly improved; the pulse being less frequent and fuller; her eyes looked brighter, and her appetite was better. The tent was withdrawn, for fear of producing undue irritation.

February 17th. The discharge from the uterus much smaller. The other symptoms indicate a return to their former condition.

February 18th. The discharge had entirely ceased; the other symptoms nearly as bad as ever. Another tent was introduced.

February 19th. The discharge from the uterus was renewed; appetite better; all the other symptoms much better than they ever had been during her illness. A tent was kept in the os-tinæ until February 26th. Whenever one would become offensive it would be withdrawn, and another inserted. She was now able to sit up in an easy chair when helped up by her attendants.

She was improving so rapidly that the tents were now left off. In two more weeks she was able to visit her mother in a carriage, the distance being five miles. She was then discharged, cured.

I was induced to suggest the use of the tent in this case from the duration of her sickness, which led me to think that it might be attributed to some abnormal condition in the uterus itself. In this belief I was strengthened by the continuance of the pain

in the pelvis, the uterus and its neighboring parts. Should part of the placenta, or a clot, have been retained, or an inflammation of the uterine walls with abscesses, or uterine phlebitis, they would have produced symptoms analogous to those presented by this case. In any of the above cases, I expected, I think reasonably, to receive benefits from the use of the tent. In the first case, by dilating the neck of the uterus, the foreign matter would be offered a free passage for its expulsion; in the second case, the pressure produced by the swelling of the tent upon the walls of the abscesses would cause them to open into the uterus, and be expelled externally instead of into the peritoneal cavity, which it might do if left alone; and, thirdly, if uterine phlebitis had existed, the pressure and the medicaments that could by that means be locally applied, would be adjuvants not to be despised.

That the tents were the main agent in producing the cure of this patient, I have not the least doubt, as she had become so weak she could not turn herself in bed, and immediately after the use of the first one, her strength began to return; and as soon as it was removed, and left out for nearly forty-eight hours, she began to relapse to her former condition. With the renewed use of the tent we date her permanent improvement.

THE MOON AND THE WEATHER.

If any marked connection existed between the state of the air and the aspect of the moon, it must inevitably have forced itself unsought upon the attention of meteorologists. In the weekly return of births, deaths and marriages issued by the Registrar-General, a table is given, showing all the meteorological elements for every day of the year, and a column is set apart for noting the changes and positions of the moon. These reports extend backward nearly a quarter of a century. Here, then, is a repertory of data that ought to reveal at a glance any such connection, and would certainly have done so had it existed. But no constant relation between the moon columns and those containing the instrument readings has ever been traced. Our

meteorological observatories furnish continuous and unbroken records of atmospheric variations, extending over long series of years; these afford still more abundant means for testing the validity of the lunar hypothesis. The collation has been frequently made for special points in the inquiry, and certainly some connection has been found to obtain between certain positions of the moon in her orbit and certain instrumental averages; but so small are the effects traceable to lunar influence that they are almost inappreciable among the grosser irregularities that arise from other, and as yet unexplained, causes.—*Once a Week.*

THE CHASMS OF THE COLORADO*.

By A. HYATT.

In Niagara we readily realize the power of demolition attributed to its waters. The Fall is still receding, the ground is shaken under us by its blows, the chasm it has cut yawns before our eyes. But it is another and far different matter to recognize the same force in other localities, where, perhaps, a puny stream, depleted by the summer heats, trails along the centre of some deep gorge.

Here the observer must remember that time has no boundaries in geology; that existing causes, provided they are capable of carrying away ever so small a portion of solid earth and rock now, would, in ages past, have had opportunity enough to have destroyed the whole of the rocky core which once filled the ravine.

Let him descend and look at the tottering pinnacles threatening him from above, and then examine those that have already fallen. The layers of the shattered masses are open to the ice-wedges in winter, the grinding and transporting power of the spring freshets, the alternate heat of noon and cold of night. Acted upon also by the oxygen of the air, the acids in the water, now dry, now wet, is it a wonder that they are

*The above article was first published in the *American Naturalist* for September, 1868, and kindly furnished the *Medical Reporter* for publication, with some additions; and for which favor, and the use of the plates, we return our thanks to the editors of that most valuable journal.

covered by a coat softer than the interior of the rock, which is readily ground off or dissolved by the stream? The rusty coating of iron arises from the same causes, and yields in the same way when exposed to similar influences, until the hard metal has entirely disappeared.

The lofty ledges themselves are constantly crumbling, the finer dust swept away by the winds, and the heavier pieces plunging to the bottom. Every rain carries away, in solution, the dust which the winds have spared, and a portion of the softened outer-coatings of the stones.

Watch the bottom of any fast running rivulet, you will see a moving cloud of the finest particles, and under them larger pieces rolling confusedly onwards. The larger pieces are slowly but surely wearing themselves away, and the moving cloud is the result of this grinding. Thus it is that nearly all the stones found in brooks are pebbles. When first broken away from the parent rock they must have had sharp edges like any other fragment. Have you never found a piece of a bottle in the bed of a stream, with the edges nicely smoothed, and the sides scratched and scored like ground glass? They are quite common, and show how pebbles are made with perfect accuracy.

Quietly and almost imperceptibly the tireless waters work, except when heavy rains or spring freshets, muddy and discolored with their burden of dust and dissolved rock, move even large boulders and destroy well known landmarks. The ability of water to handle rocks of any size, provided it is deep enough and swift enough, is unquestioned. In the Au Sable River, where the inclination of the shelving rock which formed the bed was not over two or three degrees, or the depth more than eighteen inches, I have myself, by the aid of a lever, rolled into the current great pieces of sandstone, three or four feet long and a foot thick, and heard their heavy rumbling over the ledge as they were carried away. Among the shales, limestones and sandstones, ravines of this description are common; and in these sedimentary rocks where layer answers to layer on either side of the gorge, there can be but little doubt that water has carved them out. In the more disturbed localities, how-

ever, where the stratification is obscured, it become difficult to determine whether the chasms were not originally great cracks in the earth, subsequently enlarged by the grinding and transporting power of the stream. The Colorado of the West affords the best illustrations of these two kinds which have yet been seen by man. In its lower part the rocky sides of the cañons are cut out of strata highly inclined and disturbed, where they have been bent upward to form the mountains, while in its upper portion they are perfectly horizontal.

Two rivers, the Green and Grand, rise at the western bases of the Rocky Mountains, ten or twelve thousand feet above the sea, one in Southwestern Nebraska, the other in Southeastern Oregon, and are said to unite their streams near the southern boundary of Utah, to form the Colorado of the West. This then flows southwesterly, and empties into the Gulf of California. The descent is accomplished at first by a grand cañon cut through a succession of elevated plateaux, called Mesas, which spread out westward from the base of the Rocky Mountains, like a gigantic stairway, each step a thousand feet or so in height and many miles in breadth, and in its lower part by a series of cañons through ranges of mountains.

Plate 8* shows the northwestern prolongation of the Purple Hills, which form the first three cañons in the river. The two pinnacles of "Chimney Peak," looming up in the background, are composed of trap. This being much harder than the material of the neighboring rocks, has yielded less to the action of the elements, and shows how vast has been the denudation which has destroyed them. Professor Newberry estimates that in some cases the wearing away of the mountain masses has been upon such a grand scale, that now they are only half their original size.

The Mojave cañon, the fourth or fifth through which one passes in ascending the river, is described by Lieutenant Ives as follows: "A low, purple gateway, and a splendid corridor with

*This and the following plate is from the editors of the *American Journal of Arts and Sciences*, who received them through the courtesy of Prof. Newberry. They were first published in Lieut. Ives' Report upon the Colorado River of the West (4to. Washington, 1861), to which source I am indebted for my information with regard to this wonderful region.



Plate 3.

CHIMNEY PEAK.

massive red walls, formed the entrance to the cañon. At the head of this avenue, frowning mountains, piled one above the other, seemed to block the way. A sharp turn at the base of the apparent barrier revealed a cavern like approach to the profound chasm beyond. A scene of such imposing grandeur, as that which now presented itself, I have never before witnessed. On either side majestic cliffs, hundreds of feet in high, rise perpendicularly from the water. As the river wound through the narrow inclosure, every turn developed some sublime effect or startling novelty in the view. Brilliant tints of purple, green, brown, red and white illuminated the stupendous surfaces and relieved their sombre monotony. Far above, clear and distinct upon the narrow strip of sky, turrets, spires, jagged, statue-like peaks and grotesque pinnacles overlooked the deep abysses."

To this succeeds the Painted Cañon, whose exquisitely tinted walls, though less grand, seem to have excited the artistic taste of the explorers not less than the Mojave Cañon. Then occurs the Black Cañon, where, for twenty-five miles, the narrow river plunges through the sunless depths of the Black Mountains, the precipices on either side rising perpendicularly a thousand feet or more from the water. The little band, in their frail boat, were buried in this fearful gorge for two days, and one follows them through the difficulties and dangers of the pass with breathless interest.

The walls of these cañons, according to Dr. Newberry, the geologist of the expedition, are formed of great masses of granite, porphyry, trap, and other volcanic rocks, with layers of highly crystalline limestone and conglomerates, which are of equal heights, and correspond exactly on either side of the river. The unavoidable inference from these facts is that the mountain ranges, of which there are several besides those I have mentioned, once crossed the bed of the river and dammed back its flow, filling the valleys between with extensive lakes. These were probably connected by a series of cascades and rapids, which must have been of unparalleled beauty and grandeur; but as Niagara is destroying itself, so have they de-

stroyed themselves. The stupendous precipices, so graphically described by Lieutenant Ives, are the trophies of their unconquerable power, the remnants of those mountain barriers through which the cataracts ate their way and drained the great lakes of the interior.

These chasms, however, with their thousand feet or so of granite and solid porphyries, are but the outer gates preparing the mind for the awful sublimity of the Great Cañon. The local disturbances or oscillations which gave rise to the wild scenery of the lowlands, tossing their originally horizontal layers into lofty mountainous waves, have made no impression upon its walls. The level courses of sandstone, limestone, and shale, lie upon a bed of granite, of itself a thousand feet thick, without a bend or fault to mar their perfect parallelism. The entire thickness of the first great Mesa or plateau, west of the Rocky Mountains, is exposed in the cliffs, and the edges of the severed plain hang in the air over a mile above the river.

"The scenery," says Lieutenant Ives, speaking of a side cañon down which they passed some seventeen miles to the river, "much resembled that in the Black Cañon, excepting that the rapid descent, the increasing magnitude of the colossal piles that blocked the end of the vista, and the corresponding depth and gloom of the gaping chasms into which we were plunging, imparted an unearthly character to a way which might have resembled the portals of the infernal regions." No attempt is made to describe the Great Cañon itself. The explorers seem to have succumbed to the awe created in their own minds, and yielded the greatest homage they could have paid to the unearthly nature of the scene—silence. For three hundred miles the precipitous walls vary from three thousand to six thousand feet in height, and on every side the plain is furrowed by the tributaries, so that "fissures, so profound the eye cannot penetrate their gloomy depths, are separated by walls whose thickness one can almost span, and slender spires that seem tottering upon their bases shoot up thousands of feet from the vaults below."

The country is impassable to man and beast, and none but

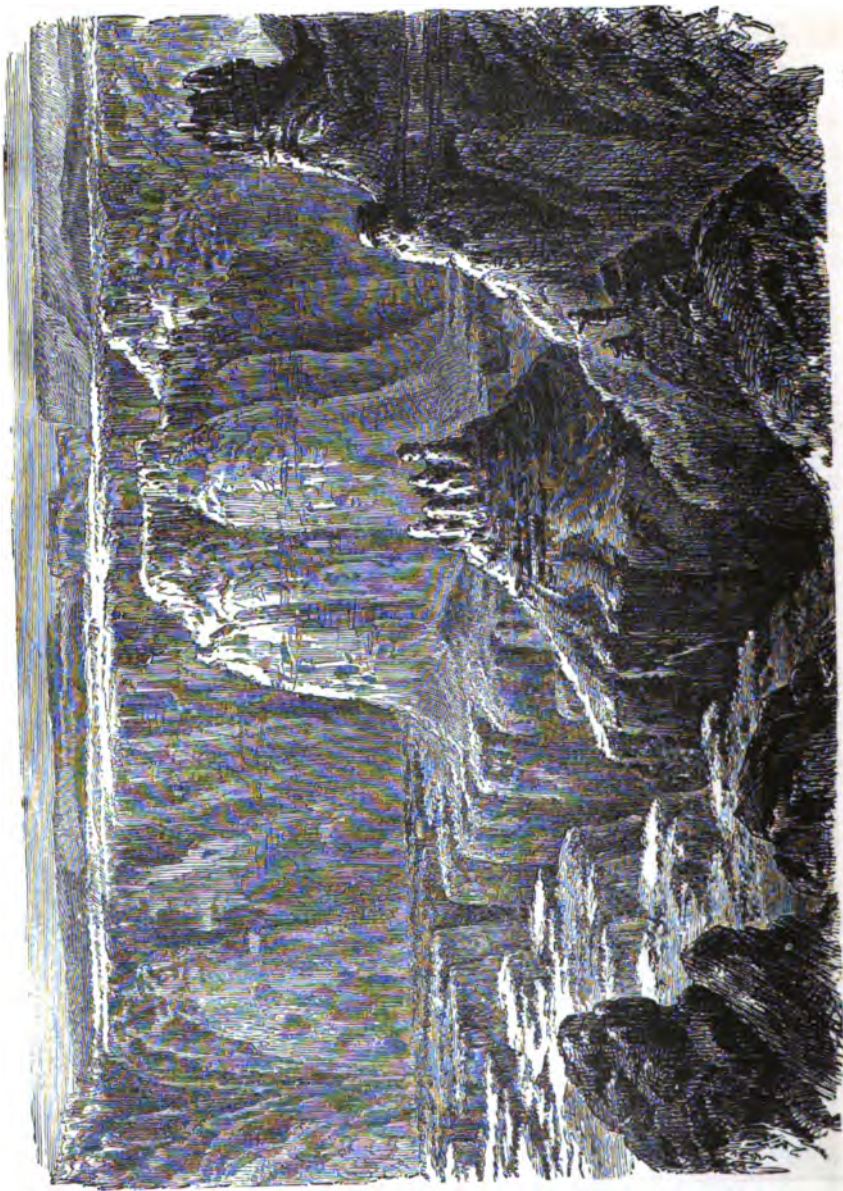


Plate 4.

THE CHASM.

Page 331.

birds can explore the cavernous abysses. The solitude is unbroken, and the inhospitable rocks deserted, save by a few Indians who drag out a wretched and monotonous existence among the subterranean passages. No vegetation clings to the sides of the cañon or covers the broken surface of the Mesa; all is alike naked and savage. This is well represented by plate 4, which gives a view of the general aspect of the surface, with other Mosas rising in the distance.

The chasm at Niagara excites much wonder, but what shall be said of this? The horizontal strata, answering layer to layer upon either side, are witnesses that cannot lie. If this three hundred miles of solid earth had been torn apart by volcanic forces, the strata would not now be horizontal and continuous from side to side in the bed of the river, but contorted or bent upward. Had one part settled away from the other, leaving a gap between, the strata would not be at equal heights. The river is the only agent that could have done the mighty work. At some period of past time incalculably distant, the Colorado and its tributaries flowed over a mile above on the Mesa, and descended by a cascade into a great lake which filled the valley between the Great and the Black Cañons. A succession of such lakes, connected by cataracts or rapids as before described, led over the mountain chains, until step by step it reached the valley through which it now flows to the Gulf of California.

Newberry found, in the deposits of the lower part of the river, the tooth of a mastodon and the silicified remains of fossil drift-wood buried in the ancient banks now some two hundred feet above the present level. These remains indicate a far more abundant vegetation than at present, and that when the lakes spread their broad sheets over the now barren valleys, and the rivers were near the surface of the Mesa, all the land was covered by great forests of pine, among which huge elephants roamed and cropped the succulent leaves. Time has sapped this green, luxuriant youthfulness, and in its seared and wrinkled old age, though grander and more majestic, the country is bald and unfruitful.

Since the publication of the above we have received an extract from the "Transactions of the St. Louis Academy of Natural Science, Vol. II, p. 499, reported January 6, 1868, to J. D. Perry, Esq., President Union Pacific Railway, Eastern Division, by C. C. Parry, Assistant Geologist of the Union Pacific Railway Survey." This extract gives a most interesting account of a journey down the Colorado, undertaken by two men, only one of whom, however, lived to relate his really wonderful adventures.

A party of three, while prospecting for gold, were attacked by Indians, and the leader killed, on the banks of Grand River. The remaining two, however, escaped, fled back to the river which they had but just crossed, and constructed a raft upon which they embarked. They floated down Grand River, passed the mouth of Green River, and entered the Colorado proper, about thirty miles from their point of departure. Below this junction the stream narrows and the Grand Cañon begins. Between its sullen precipices these two men were carried by the powerful current for forty miles, to the mouth of the San Juan, without accident; but on the fourth day Henry Strole was drowned, and James White was left to pursue his gloomy voyage alone and without provisions, these having all disappeared in the furious rapids which had destroyed his companion. About one hundred and eighty miles below the mouth of the San Juan he passed the Colorado Chiquito, estimating the distance by the probable rate of swiftness of the current, and from thence to Callville he floated, probably, three hundred miles more. He arrived at this place "on the 8th September, 1867, just fourteen days from the time of starting, during seven of which he had no food of any description." "When rescued this man presented a pitiable object, emaciated and haggard from abstinence, his bare feet flayed from constant exposure to drenching water, aggravated by the occasional scorchings of a vertical sun; his mental faculties, though still sound, liable to wander, and verging close on the brink of insanity." This voyage is one of the most remarkable adventures yet recorded, the distance traversed, some five hundred miles, half the time without food,

and bound to a few logs which were in constant danger of parting their lashings, seems almost incredible. The important geographical facts are the location of the mouths of the San Juan and Chiquito, and the farther confirmation of the discoveries of former travelers that the river is not navigable. Mr. Strole thinks the height of the cliffs in the Grand Cañon did not exceed three thousand feet, but this estimate can hardly throw doubt upon the estimate of Newberry and Ives, whose party had the use of instruments, and did not trust entirely to their eyes. If it is really any object for a future railroad to traverse this country, we have no doubt that an attempt will be made to survey the chasm at high water, which, according to Ives, must be fifty, and Mr. Strole, thirty or forty feet above the lowest level, and this, Mr. Perry says, is feasible. Who knows but that some of the readers of this may yet sleep in the Grand Cañon Hotel.

LECTURE ON SLEEP.

By R. SYMES THOMSON, M. D.

A third part of our lives we spend in sleep, and are thus naturally too familiar with its phenomena to be surprised at its mysterious nature. During sleep the brain is almost bloodless; a gush of blood heralds the return of reason, while in dreaming a pink suffusion, intermediate between the circulation of waking and sleeping, is observed (Durham). This seems to indicate incidentally that true sleep is dreamless. Every idea which floats through the mind, every emotion, every exercise of reason or volition, is accompanied by definite nerve currents, or, in other words, by a definite exertion of physical force. There is no reason to doubt, but every reason to believe, that this force is a correlative of the universal cosmical force. It is, indeed, probable that it is a vibratory or molecular force, similar in character to heat and electricity. It is possible that although the higher or spiritual element in our consciousness may remain as intangible and unknowable as it now appears, we may yet learn

to trace its operations, to some extent at least, by studying the physical phenomena with which, in our present state of being, it is associated.

Mind is even more closely associated with force than it is with matter, and it is to the study of force that we should look for a measure of its workings. The whole available force in the body is undoubtedly derived from oxidation. This oxidation is mainly, if not entirely, effected in the blood, and it is therefore evident that a continuous flow of blood to the nerve centers is necessary as a source of power as well as for regeneration of the nerve tissue. The sympathetic nerve centers are supplied continuously with blood, and the force generated by these centers is, like the blood supply, continuous, so the operations they govern, whether of secretion or involuntary muscular action, go on without intermission, or rather without long periods of rest; for it must be borne in mind that the heart rests between each pulsation at least a quarter of the time. The respiratory muscles rest one-third of their time. In walking some muscles rest while others are in action. But there is no rest for the brain except in sleep. The cerebrum, if not the whole of the cephalic ganglia, receives a full supply of blood only during waking hours, and is therefore subject to frequent intermissions in the discharge of its functions.

It has been shown (Ranke) that the feeling of fatigue in voluntary muscles is due partly to the sensation of impotence, the store of force being exhausted; but chiefly to the accumulation of the products of disintegration in the tissues. It has been shown, too (Claude Bernard), that the direction and intensity of the flow of blood are greatly under nervous control, and it is probable that the condition we call sleep is induced by the operation of the nerves, whose special business it is to control the flow of blood to the brain. The blood ceasing to flow freely to the brain, there is no store of force to draw upon; nerve currents can no longer be produced. If during this state a ray of light fall on the retina, no perception follows, for though it may produce an afferent current in the optic nerve, this current will not have sufficient intensity to stimulate into action the feeble

force remaining in the sensorium ; so it dies away without stimulating new nerve currents. The profoundness of sleep is probably proportionate to the amount of blood circulating in the brain, and it is probable that the brain is never absolutely destitute of blood. Hence, a powerful stimulus, as a loud sound or bright light, may nearly always stimulate into activity sufficient force to awaken reflex current, which shall draw more blood to the brain, and so produce the waking state.

Anæsthetics not only act upon and check oxidation in the blood, but arrest the blood supply to the brain by their action on the nerves which regulate it.

The enormous physical effects which may follow a very slight physical stimulus prove that the stimulus does not supply the force, but simply acts as a stimulus, like a spark on gunpowder.

It must not be thought, however, that there is no blood in the brain during sleep, for the vital fluid is just as essential for the nutritive work which is so actively done then as it is for the functional work of waking hours. When the circulation is "slowed," exosmosis, with nutrition of tissue, goes on most rapidly, while activity of circulation favors endosmosis of those products of oxidation which, if retained, would check further action.

We do not know the precise nature of the waste product produced by brain action (it is probably allied to the lactic acid developed by muscular work), but, as with muscles, burning tapers, and generators of electricity, unremoved products interfere with further action. These products are formed in close brain work more rapidly than they can be removed ; they check oxidation and functional activity, and thus tend, by calling for repose, to prevent exhaustion. The feeling of lassitude and drowsiness attendant on this state continues till the waste products are got rid of. To this end, healthy action of all the excreting organs is essential to clear intellect and happy activity of mind.

The lecturer having placed the foregoing physiological data before his audience in the simplest language, freed from all tech-

nicality and forensic verbiage, showed that regular, uninterrupted repose was essential to mental and physical health; that the blood, whence all nerve force, as well as muscular force, is derived, must be suitably fed, and the excreting organs kept in good working order.

While it is true that the more active the mind, the greater the need of sleep, yet the sanguine and energetic, in whom "the lamp of life burns strong and bright," whose nutritive processes are rapid and efficient, sleep deeply and quickly, gaining in four or five hours as much rest and recreation as the plethoric and phlegmatic, in whom "the light of intellect is dim," secure in nine or ten hours of disturbed slumber. If much work is to be done, the former state is to be aimed at; if "time to be killed," the latter.

Although habitual impressions, as "the morning gun" on shipboard, do not rouse the sleeper, the cessation of habitual impressions rouses at once, as at the end of a sermon. The instance often recorded of the signal lieutenant who could not be awoken by the loudest noise or most violent shaking, but started at once into wakeful attention when the word "signal" was whispered near him, illustrates the fact that receptivity as the sensorium is needed before a stimulus conveyed by the senses can rouse dormant consciousness.

Sleeplessness after prolonged study, due to passive dilatation or deficient tone in the cerebral vessels, is to be treated by those means that withdraw blood from the head—*e. g.*, warm water to the feet, cold splash of face, shoulders, etc., and vigorous friction, so as to draw blood to the rubbed skin and rubbing muscles. Prolonged wakefulness was shown to be a cause of deficient mental power, insanity, etc.

The lecturer concluded with a vigorous appeal to the audience to avoid the evil of the day, which is not so much overwork as undersleep.—*Medical Times and Gazette.*

CARBOLIC ACID IN CUTANEOUS DISEASE.

By F. P. MANN, M. D., of Brooklyn, N. Y.

My object in citing the following cases, is to call the attention of the profession to the efficacy of carbolic acid in the treatment of diseases of the skin, particularly those which are known to depend upon, or are accompanied by, the development of any of the forms of fungi. I am not aware that this hydro-carbon has been used before, in the treatment of disease, except as a disinfectant.

CASE 1—*Chronic Eczema*.—The patient, a child six months old, nursed by its mother, a young and apparently healthy woman. Eruption first appeared upon the scalp, when the infant was two and a half months old. The nurse applied olive oil, cleansing the head daily with castile soap and tepid water; the eruptions, however, progressed rapidly, and when I first saw the child, namely, three and a half months from the time the disease commenced, not only the head, but the entire trunk and extremities, presented a most pitiable appearance. The thin, soft incrustations, more broad than prominent, of eczema impetiginodes, occupied the head, back, chest and limbs, while here and there a fresh group of vesicles of eczema simplex pointed out most pathognomically, the true nature of the eruption. The evacuations were variable, sometimes of natural color, at others persistently green, and always very acid, as shown by litmus. On examination by microscope, they were found to contain milk corpuscles in abundance, mixed with casein, that, separated by the lactic acid of the stomach, had passed into the duodenum undigested, and, mingling with the bile, had drifted through the intestinal canal. The urine was examined chemically, and by microscope; it was highly acid, depositing urates freely; a few drops evaporated on a glass slide gave glomeruli and isolated crystals of uric acid. The serous exudation beneath the incrustations was also highly acid. The milk from the mother of the child was also carefully examined; it contained an abnormal quantity of lactic acid, though the corpuscles did not coalesce, it gave an acid reaction to neutral litmus. Under the influence of

thoroughly alkaline treatment, namely, baths with bicarb. soda, and bicarb. potass. internally, three times per day, in quantities sufficient to completely neutralize the acid reactions of the dejections, urine, and serum from the eruption (an alkali was also given to the mother), so rapid was the improvement that within ten days the scalp was free from disease, and the irritation of the surface everywhere much abated.

Fresh groups of eczema simplex, however, continued to be reproduced upon both body and limbs. I then determined to try the effects of carbolic acid as a parasiticide, having recently tested its power in the destruction of the penicillium glaucum and torula cerevisiæ; accordingly, a solution, containing half a drachm of carbolic acid in four ounces of water, was applied three times per day to the eruption. The effect was immediate; the vesicles disappeared promptly, producing a slight exfoliation, and did not return, except a few groups about the neck, which two or three applications of the solution removed.

CASE 2—*Impetigo*.—The patient was a child of ten months old, of strongly strumous diathesis; the pyodracious pustules were developed upon the upper lip, and about the mouth, while from the nares issued a sanious and very acrid discharge. The carbolic acid, same strength as before, was used freely upon the eruption, and the nares were also injected with the solution; the effect was quite as marked as in the former case, the pustules withered, and soon altogether disappeared, leaving the skin free from irritation.

CASE 3—*Psoriasis inveterata*.—Two years standing; patient a stout girl, fifteen years of age; body and limbs covered with the eruption. Ordered Donovan's sol. carbolic acid to be applied every morning in proportion of one part of the acid to four of water; body to be sponged with castile soap and warm water, prior to its application. In three weeks from the date of the first application, not a vestige of the eruption remained. How far the Donovan's solution assisted in producing this rapid convalescence from one of the most obstinate of all cutaneous diseases, I leave others to judge.—*New York Medical Journal*.

DYSENTERY TREATED BY NUX VOMICA.

BY WILLIAM M. CORNELL, M.D., LL.D.

It may have been noticed in the medical journals lately that the *treatment of dysentery by nux vomica* was thought to be something new. But in this respect, "the thing that is, is that which has been."

In 1848, I attended, and reported the following cases, which may be found in the fourth volume, p. 295, of the *Charleston (S. C.) Medical Journal*, published in 1849. It may be useful to republish them. I may add, I have treated dysentery in the same way ever since, now twenty years.

Ten Cases of Epidemic Dysentery successfully treated by Nux Vomica.—In August, September, and the early part of October, 1848, the dysentery prevailed more in the vicinity of Boston, and proved more fatal, than it had been for many years. In the village of S—, where I was spending my nights, at this season, it was very prevalent, and, in many cases, proved fatal. The usual remedies seemed to produce no good effect. The disease run a rapid course into a putrid stage, and death ensued. This was, more especially, the case with children, among whom it prevailed more than among adults. Almost all who were attacked between the ages of six months and four years, died.

The town of S—, though elevated several hundred feet above the level of the sea, lies, nevertheless, in a valley, and the reflection of the sun from the surrounding hills produced a high temperature during the day, and the evaporation from stagnant water in the valley lowered the temperature much at night. There was often a difference of twenty degrees between the day and the night. This, in my opinion, accounted for the prevalence of the disease. I think such locations are much more liable to dysentery than those where the thermometer shows but a little difference between the day and the night.

The following was the general course of the symptoms—there were, however, some sporadic variations: At the first, slight chills, soon followed by a low grade of fever; a hard, fre-

quent jerking, though not full pulse; frequent discharges of blood and mucus, with griping pains in the bowels, and constant pain in the loins; no pain in the head; skin rough and dry; urine high colored and scanty. The colon and rectum seemed to be the chief seat of the disease. There was little or no bile mingled with the stools. With the children, especially, the disease ran speedily into a putrid type. All the medicines usually employed in dysentery—castor oil and laudanum, opium and ipecac, acetate of lead, kino, sulphate of magnesia, sulphate of soda, tartrate of potassa and soda, comp. powder of jalap, and the whole range of diaphoretics, wild strawberry, blackberry, etc., all were tried, but apparently did no good. The physician of the village said he did not wish to be called to a case, for they all died.

In this state of things, I was led^d to look around for some other medicine, and turning over all the books of my medical library—not a very small one—I hit upon the following passage in the first volume of John Samstrong's works, of London, page 419: "A friend of mine, Mr. George Vaut, of Ipswich, has tried a remedy in dysentery for sixteen years, in about two hundred cases, and the result has been successful, and so remarkably uniform, that I feel it my duty to mention the treatment here. (This was to his medical class.) This gentleman gives in dysentery, or inflammation of the mucous membrane about the colon, seven grains of *nux vomica* thrice, daily. It neither purges nor constipates, but removes the inflammation, and healthy evacuations follow. Mr. Vaut, who resides in London, bears similar testimony to the value of this remedy, and I strongly recommend it to your notice. I shall certainly try it in the next case I meet with. It seems to operate as a sort of specific. It was first mentioned by Hagstrom, and has been very much neglected since his day."

Upon reading the above, I immediately determined, under the circumstances above stated, to make trial of the *nux*. I did so, and gave it in the full dose of seven grains thrice, daily, to adults, and from one to four grains to children, in proportion to their ages. The result was most happy. Not a patient who

was treated with this medicine died. It was prescribed in ten cases, within three or four weeks, and all recovered. No cathartic medicine was given, except teaspoonful doses of *bitartrate of potassa* in a few cases.

It would be presumption to say that this medicine is a perfect *specific* for dysentery in all cases. Indeed, I am far from having much confidence in *specifics* generally; but, I am constrained to say, that the above named medicine altogether exceeded my expectations, and I earnestly recommend a trial of it in dysentery.

I had one case of which I almost despaired before using the nux; but the patient recovered under its use. I hope the profession will give this medicine fair trial. I tried the *strychnine*, but it did not succeed so well as the *nux vomica*.—*Buffalo Med. & Surg. Journal*.

DEODORANTS.—For many purposes dry clay is not only the cheapest but the best deodorant. I tried nearly everything in a privy, and only succeeded by using occasionally small quantities of dry clay loam. I took equal quantities of old putrid urine, and mixed severally with clay, sulphate of lime, animal charcoal, and wood charcoal. After a few hours the clay mixture alone was fully devoid of odor. It *destroys* or *absorbs* the foul odors, instead of partially overcoming them by substituting chlorine or coal tar in their place.

The presence of clay has a great influence upon the health of communities. I have known many cases of typhoid fever and dysentery in this vicinity within a few years, nearly every one of which has been on a sandy or alluvial soil. Where the water used has filtered through a clay soil, there has hardly been a case of these diseases.

There is another advantage in the country in using clay for privies. The removal of the contents is no longer a disgusting operation, while the farmer or gardener has a valuable supply of fertilizing material for his grounds.

I believe that clay would be an excellent application to foul ulcers and other discharging sores.—*H. A. Sheldon, Middlebury Vermont*.

COUNTRY WELLS.—Dr. Attfield has written a letter to the *Times* on this subject. After alluding to the fact that wells are generally sunk where most liable to contamination, and often receive the contamination of sewers, he says that mineral matter dissolved from the soil is comparatively harmless; animal and vegetable matter may be kept out by every precaution. Good soil is here our best friend, nature's own purifier, entirely destroying the substance last mentioned, if only allowed to have fair play; but its power for good is limited, its power for harm terrible, when saturated by drainage from adjacent accumulations of filth. Polluted water does not generally betray its condition till possessed of a strong odor; earlier intimation may, however, be obtained by the following tests: Half fill a common water-bottle, cover its mouth with the hand, violently shake for a minute, and quickly apply the nose. If nothing unpleasant is detected, tightly cork the bottle, set it aside in a warm place at about the temperature of one's body for a couple or three days, and repeat the shaking, etc.

A SIMPLE METHOD OF PROTECTING WATER FROM THE ACTION OF LEAD PIPE.—*Dingler's Polytechnisches Journal* publishes a simple method, brought forward by Dr. Schwarz, of Breslau, for preventing the poisonous influence of lead pipes on water, by forming on the inside surface of the pipes an insoluble sulphuret of lead, which has proved so effective that, after simple distillation, no trace of lead can be detected in water which has remained in the pipes for a long time. The operation, which is a very simple one, consists in filling the pipes with a warm and concentrated solution of sulphuret of potassium or sodium; the solution is left in contact with the lead for about fifteen minutes. Commonly, a solution of sulphur in caustic soda will answer the purpose, and produce practically the same results. It is known that sulphuret of lead is the most insoluble of all compounds of lead, and nature itself presents an example which justifies the theory of Dr. Schwarz, since water extracted from the mine of Galena does not contain lead, a fact which has often occasioned surprise.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

VESICO-VAGINAL FISTULA, FROM PARTURITION AND OTHER CAUSES, WITH CASES OF RECTO-VAGINAL FISTULA. By THOMAS ADDIS EMMET, M. D. New York: William Wood & Co.

The above work is a welcome addition to our current medical literature, and from no author would a work on this subject receive more attention than Dr. Emmet. From his long study of diseases peculiar to females, and his position as Surgeon-in-Chief of the New York State Woman's Hospital, he has had an opportunity and experience granted to but few, hence the great value of his book. It is well illustrated, and embraces the various causes; the nature and best methods of treating this class of injuries. It has representations of the various instruments to be used—one his improved Vaginal Speculum—also, the manner of inserting the sutures and positions of the fistula. Altogether it is a very valuable and useful work to the surgeon and gynecologist.

TRANSACTIONS OF THE EIGHTEENTH ANNIVERSARY MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, HELD IN QUINCY, MAY 19 & 20, 1888.

TRANSACTIONS OF THE TWENTY-THIRD ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY, HELD AT DELAWARE, JUNE 2, 3 & 4, 1888.

We have received the above Transactions, and find them replete with much valuable matter. We find in the Illinois proceedings an interesting report on Pathology and Treatment of Epidemic Cholera, by Prof. N. S. Davis; also, on Improved Form of the Endoscope, by Prof. E. Andrews. The reports on Obstetrics, by Dr. E. W. Moore, and that on Spinal Curvatures, by Dr. F. O. Earle, are also excellent contributions. Dr. Prince, of Jacksonville, has a volunteer communication on Lithotomy. The next meeting will be held at Chicago.

The Ohio proceedings make a large volume, and contain more than an ordinary number of valuable medical papers; but as our friend, Dr. Stevens, is of the opinion that Ohio furnishes a large proportion of the brains that control our great national affairs, it is but reasonable to suppose she should aspire to do the same in medical affairs also; and while we think it possible that there is some brains in other parts of our great country, we do not desire to detract from the capacity of our talented

neighbors. The reports of Dr. A. Dunlap on Ovariectomy, and Dr. Massey on Surgery, are very complete; but we were especially pleased with the report of Dr. Kay on Cerebro Spinal Meningitis, and the Treatment of same by Dr. Scoville. Dr. Reamy also presents an admirable paper on Puerperal Convulsions. The next meeting of the Society will be held at Columbus.

The profession of both States may well be proud of the results of their last annual meetings. It is by the collecting the material gathered by local observations that the history of disease of any country can be obtained, and this object can only be effectually gathered through the aid of State Societies.

CONSERVATIVE SURGERY IN ITS GENERAL AND SUCCESSFUL ADAPTATION IN CASES OF SEVERE TRAUMATIC INJURIES OF THE LIMBS, WITH A REPORT OF CASES. By ALBERT G. WALTER, M. D. Pittsburgh, Pa.

This is one of the most valuable monographs on surgical subjects we have received for a long time. Dr. Walter's object in his work is to save not only suffering and life, but aims a just blow at this very reprehensible practice, so common during and since the war times, of amputating, for almost every cause, limbs, which, with proper care, may be saved as useful members. The Doctor says he desires to *First*, Discard the common routine of practice, sanctioned by age, of sacrificing every limb, with soft and bony tissues lacerated and crushed. *Second*, To act merely as an intelligent assistant to nature in her efforts to restore the injured parts.

We commend the work, especially to young surgeons, as a safe and trusty reminder of their responsibility and duty in such cases.

RECHERCHES EXPERIMENTALES SUR UNE NOUVELLE FONCTION DU FOIE, CONSISTANT DANS LA SEPARATION DE LA CHOLESTERINE DU SANG ET SON ELIMINATION SOUS FORME DE STERCORINE (SEROLINE DE BOUDET). Par AUGUSTE FLINT, Fils, Docteur en Médecine à New York. Paris: Germer Baillière. New York: D. Appleton & Co.

The favorable reception which the above work has received from the profession in Paris is but evidence of the world-wide reputation of our talented countryman as a Physiologist and close investigator in Medical Science.

MEDICAL REPORTER.

ST. LOUIS, NOV. 1, 1868.

Professor Paul F. Eve.—This able and distinguished Surgeon reached our city on the 22d of October, and we had the pleasure of listening to his very eloquent and interesting introductory address, the commencement to his course on Surgery, at the Missouri Medical College. Dr. Eve is one of the oldest and most eminent medical teachers in the West, and as a practical Surgeon has but few equals. Educated at Paris, he, after graduating, went as a Surgeon in the Polish army, and received the Cross of the Legion of Honor for his distinguished services during the siege of Warsaw. Returning to the United States, Dr. Eve soon became interested in medical teaching. He was largely instrumental in founding the Medical College of Georgia, filling the Chair of Surgery for eighteen years. He then became Professor of Surgery in the Louisville (Kentucky) University, serving, however, only one year. In 1852, Dr. Eve was called to the chair of Surgery in the Medical Department of the University of Nashville, Tennessee, being present at the opening of the School during its first course. This position he filled for seventeen years, during which time it became one of the most popular Medical Colleges in the West, and which was mainly owing to the brilliant and eloquent teaching and unsurpassed clinical instruction of Dr. Eve. Having resigned his position in the Nashville School this past summer, he, a few weeks ago, accepted the call to fill the chair of Surgery in the Missouri Medical College, made vacant by the death of the lamented Professor Jos N. McDowell. Professor Eve is one of the oldest lecturers on Surgery in the United States, that eminent and renowned Surgeon, Dr. Dudley, of the old Transylvania University, at Lexington, Kentucky, being the only Professor of Surgery now living who was lecturing when Dr. Eve commenced teaching, nearly forty years ago. Dr. Eve has filled the honorable position of President of the American Medical Association, and is also author of several valuable

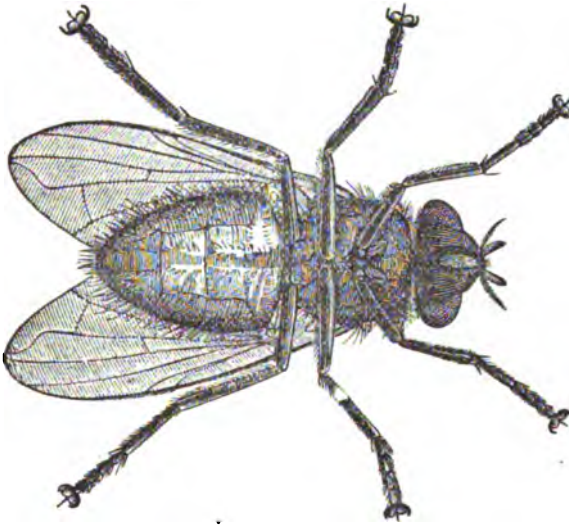
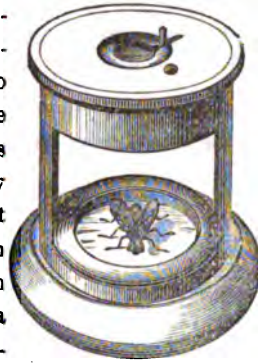
works, and as Surgeon, Author, and Teacher, has ever been recognized as one of the first in the United States.

We most cordially extend to the Doctor our warmest welcome to St. Louis, and feel assured that in his new field of labor he will find as warm friends and as genial association as those he has left.

We understand that a large number of his old students accompany Dr. Eve to St. Louis to attend the Winter Course of Lectures.

Qualified Practitioners of Medicine.—We see that in Ohio no one is allowed to practice medicine who has not graduated in some legally constituted Medical College, and, as evidence, possesses a diploma. We certainly admire the evidence of progress evinced by our sister State, and trust that the time is not far distant when Medicine and Pharmacy will be recognized in all the States as a science requiring some preparatory qualifications previous to assuming the responsible duties of Physician and Pharmacist. We do not wish to proscribe any school or class, but only to require a legal qualification, such as a diploma, as evidence that the possessor has been compelled to pass through some prescribed course of study in a legally chartered College of Medicine or Pharmacy. Surely the people owe it to themselves to require some standard of education as a requisite to hold the important position of Physician and Dispensing Druggist, as life is entrusted to them much more frequently than in other positions, such as engineers, pilots, &c., who are by law required to possess such evidence of their merit. We shall return to this important subject again, and trust our own Legislature will at no distant day do as much to protect the citizens of Missouri as Ohio has so nobly done for her inhabitants. We include the Pharmacist with the Physician, as in our judgment they go hand in hand, and both are equally responsible and should be equally bound.

The Novelty Microscope.—This little instrument which is represented in the accompanying cut is one of great value to the student and naturalist. We spoke of the Craig Microscope in a previous number of the *REPORTER*. The Novelty is intended for such objects as are not adapted to the Craig, as it is of much less power, and can, therefore, take in proportionately larger objects. As a sample of its power, we present adjoining cut of a common house fly, as represented under the magni-



fying glass. For the examination of living insects this is far superior to any other glass, as it confines them within the focus during the examination—feet up or down, as you please. It is also suitable for examining flowers, leaves, seed, cloth, wool, minerals, the skin, &c., &c., being adapted to a greater variety of purposes than any other glass ever invented. It is designed for examining such objects as cannot be examined in the Craig.

The Craig Microscope is securely mailed for \$2.75. The

Novelty Microscope is mailed for \$2.15. Mounted Objects \$1.50 per dozen for the Entomological, Botanical, &c. 50 cents each for Micro-Photographic ones.

Address George Mead, Sole Proprietor and Manufacturer, Racine, Wisconsin.

Medical College of Alabama, at Mobile.—We are pleased to see that this Medical School is fully reorganized, and will open on November 16. The Faculty offer great inducements to students, and we see no reason why it should not receive the patronage of students residing in the South. The Faculty is composed of able and experienced men, and all facilities are at hand to give a complete course of instruction in the various departments of medicine. The Faculty is composed of the following gentlemen: Geo. A. Ketchum, M. D., Prof. of Theory and Practice; J. T. Gilmore, M. D., Prof. of Anatomy; J. F. Heustis, M. D., Prof. of Surgery; F. A. Ross, M. D., Prof. of Materia Medica and Therapeutics; Wm. H. Anderson, M. D., Prof. of Physiology and Pathology; F. E. Gordon, M. D., Prof. of Midwifery and Diseases of Women and Children; Jerome Cochran, M. D., Prof. of Chemistry; E. P. Gaines, M. D., Prof. of Clinical Medicine; A. P. Hall, M. D., Demonstrator of Anatomy.

The Pharmacist.—We have received the first number of this Journal, published under the control of the Chicago College of Pharmacy. It is to be issued quarterly, and, possibly, monthly. It presents a neat and creditable appearance, and contains much interesting matter. We wish it all success, more so as it is the only special organ of Western Pharmacy now published.

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OSCAR F. POTTER, M. D.

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No. 18

**INDIGENOUS REMEDIES OF THE SOUTHERN STATES WHICH
MAY BE EMPLOYED AS SUBSTITUTES FOR SULPHATE OF
QUININE IN THE TREATMENT OF MALARIAL FEVER.**

By JOSEPH JONES, M. D., Professor of Chemistry in the Medical Department of the
University of Louisiana, New Orleans, La.

NO. 16.—THOROUGHWORT—BONESET—(EUPATORIUM PERFOLIATUM).

Botanical Description.—Leaves connate, perfoliate, rugose, tomentose underneath; stem villous, from three to six feet high, striate, villous, almost tomentose, and with the leaves heavy and sprinkled with glandular dots. Lower leaves connate, the upper distinct, abruptly truncated at base, all tapering gradually to the summit, serrated, rugose, slightly pubescent on the upper surface, tomentose underneath. Involucrum many leaved, (fourteen to sixteen,) eight to ten flowers, leaves linear-lanceolate, acute, pubescent, imbricated. Corolla small, white, glabrous. Style nearly twice as long as the corolla, two cleft, stigmas simple. Seed angular, peppers scabrous. A decoction of this plant is much used and recommended in fevers; it acts as an emetic, or sudorific, according to the constitution of the patient. Grows in wet soils. Flowers in September and October.—ELLIOTT. *Sketch of Botany of South Carolina and Georgia.* Vol. 11, p. 302.

Geographical Distribution.—Inhabits meadows and boggy soils in all latitudes from Nova Scotia to Florida.

Chemical Composition.—According to the experiments of Dr. A. Anderson, of New York, this plant contains a free acid tannin, extractive matter, gummy matter, resin, lime, probably the acetate of lime; Gallic acid, probably modified; and a uniform matter, soluble in water and alcohol, and which seems to contain a bitter principle.

Dr. Anderson concluded from the results of this examination that this plant possesses active medicinal properties, and that many of its constituents and properties are similar to those which characterize the *cinchona officinalis*, the *anthemis nobilis*, and other valuable articles of the materia medica. He supposed that its virtues resided chiefly in the leaves.

Dr. Jacob Bigelow states as the results of his examinations : Every part of the *Eupatorium* has an intensely bitter taste, combined with a flavor peculiar to the plant, but without astringency or acrimony ; the leaves and flowers abound in a bitter, extractive matter, in which the important qualities of the plant seem to reside. This bitter principle is alike soluble in water and alcohol, imparting its sensible qualities to both, and neither solution being rendered turbid, at least for some time, by the addition of the other solvent ; it forms copious precipitates, with many of the metallic salts, such as muriate of tin, nitrate of mercury, nitrate of silver, and acetate of lead ; of the mineral acids, the sulphuric and muriatic, form slight precipitates with the aqueous decoction ; the muriatic, a more copious one, and the nitric, no precipitate, but changed the color red ; in the alcoholic solution the muriatic acid alone formed an immediate precipitate. Tannin exists very sparingly in this plant ; a solution of isinglass produces a slight precipitate from the tincture, and a hardly perceptible turbiness in separate decoctions of the leaves and flowers ; sulphate of iron gave a dark green precipitate, which partially subsided in a short time. In distillation, water came over very slightly affected with the sensible qualities of the plant, and not alterable by sulphate of iron.—*American Medical Botany*. Vol. 1, page 35.

According to the testimony of Dr. Joseph Long, Mr. J. Scattergood obtained from this plant a salifiable base, which forms, with sulphuric acid, tasteless prismatic crystals, and which he calls *Eupatoria*.

Medical Properties and Uses.—The effects of *Eupatorium* vary according to the dose and mode in which it is administered ; in cold infusion, and in the form of powder in moderate doses it acts as a tonic, producing effects very similar to those of the simple bitters ; in larger quantities, and in warm effusion, it sometimes proves emetic and laxative, and most commonly produces a decided diaphoretic action. So decided and uniform is this action upon the skin that it has been called “vegetable antimony,” and it has been with propriety termed a tonic sudorific.

The Indians appear to have been acquainted with the medicinal properties of this plant, and they are said to have instructed the first settlers in its use, who used it as a febrifuge long before it was introduced into the regular practice. From the settlement of the country to the present time it has been in use in various parts in the North and South, as a tonic and febrifuge, to accomplish the same purposes for which Gentian, Chamomile, Peruvian Bark, and other febrifuge tonics are employed; and many physicians have testified to its great value. Dr. Nathaniel Chapman, of Philadelphia, in his notice of this article, states that "many years ago we had, throughout the United States, a species of influenza, which in consequence of the sort of pain attending it came to be denominated the *break bone fever*. The Eupatorium, acting as a diaphoretic, so promptly relieved this peculiar symptom, that it acquired the popular title of *bone set*, which it retains to the present moment." Dr. George B. Wood, of Philadelphia, supposes that the epidemic alluded to by Dr. Chapman, was that described by Dr. Rush as having occurred in Philadelphia in the summer and autumn of 1780, called break-bone fever, from the violence of its pains, but which, there is every reason to suppose, was the disease since better known under the name of *dengue*. Dr. Wood, from this fact, suggests a trial of eupatorium in that very painful epidemic disease.

Various practitioners in the Middle and Southern States have testified to the great value of Eupatorium perfoliatum, in the treatment and cure of intermittent fevers.

Dr. Andrew Anderson, of New York, has borne unequivocal testimony to the value of this remedy in malarial fever. He states that this remedy was used in nearly every case of intermittent fever that occurred in the New York Alms-house in 1812, to the exclusion of the Peruvian Bark, and with uniform success. It was given either in decoction or in powder from 20 to 30 grains every second hour during the intermission.

Out of the large number which had been successfully treated with the Eupatorium, Dr. Anderson detailed six cases of intermittent, quotidian, tertian, and quartan; in these cases the cures

appeared to have been as expeditious as could have been expected from Peruvian Bark. In remittent fever he found that as a sudorific it produced the most salutary effects.

Dr. Anderson supports his own experience by the testimony of several distinguished practitioners.

Dr. Hosack and Dr. Baird in the treatment of yellow fever, after proper evacuations, placed almost exclusive dependence on sudorifics, and amongst this class of remedies they considered the Eupatorium, administered in the form of decoction, of great value. The disease called by some the *petechial* or *spotted fever*, and by others the *malignant pleurisy*, or *typhoid pneumonia*, has been more successfully treated by the class of remedies denominated sudorifics than by any other, and in many cases of this epidemic which occurred in the city of New York in the winter of 1812-13, after the proper evacuation had been employed, the Eupatorium was resorted to, and its sudorific, its tonic, and its cordial properties were clearly demonstrated and much benefit was derived from its use.

The testimony of Dr. Eberlie to its use in intermittent fever is not so favorable as that of Dr. Anderson. In his notice of the medicinal effects of this plant in his therapeutics, he says: "Dr. Anderson states, that this remedy was used in nearly every case of intermittent that occurred in the New York Alms-house in 1812, instead of the Peruvian Bark, and that it uniformly proved successful. I do not doubt that it has sometimes proved successful in this disease; but the result of my own experience with it does not lead me to form a very high opinion of it in this respect. I have known it to remove the disease in a few instances, by producing vomiting and copious perspiration. But in the great majority of cases in which I have tried it no manifest advantage was obtained."—*Therapeutics*. Vol. 2, p. 194.

The testimony of Dr. Wood agrees with that of Dr. Eberlie: "From the inaugural dissertation of Dr. Anderson (New York, 1813), it would appear to have been employed with very great success in the treatment of intermittents in one of the New York hospitals. Subsequent observation of its effects has

proved less favorable; and employed as a mere antiperiodic, in the ordinary mode of prescribing bark or quinine in the intermissions, it cannot be relied on. But I have known it to supersede the paroxysms of intermittent fever, when given in emetic doses, in the state of strong tepid infusion, shortly before the period for the return of the chills; and if jointly with this method of exhibition, it be administered in moderated doses, at short intervals during the apyrexia, there is little doubt that it will often prove successful. Still it is greatly inferior to sulphate of quinia in certainty, while, in its effects as thus used, it is much more disagreeable. It may be very appropriately tried in obstinate and frequently recurring attacks of intermittent fever in which quinia has become offensive to the patient, or inoperative from repetition. The same remarks are applicable to its comparative efficacy in remittents, in which, however, its tendency to produce perspiration is somewhat in its favor."—*Therapeutics and Pharmacology*. Vol. 1, p. 298.

Dr. Chapman, on the other hand, whose experience was certainly equal to, if not larger, than that of Dr. Eberlie and Wood, sustains fully the statements of Dr. Anderson: "I have had lately put into my hands a very well written tract, in which the properties and medical applications of this article are fully described. By the reports of the writer, it appears that in the public institutions of New York, it has been extensively employed in intermittent, remittent and yellow fever, in typhus pneumonia and catarrhal fevers, in several cutaneous affections, in dropsies, and for the removal of mere debility. By properly regulating the administration of the medicine it has, according to him, fulfilled successfully, all these diversified indications. After making due abatement for the confidence in which new and favorite remedies are always announced, I entertain little suspicion of the accuracy of these accounts. My own observations, together with communications which I have received from highly respectable sources, would, indeed, nearly confirm every part of the preceding statement relative to the efficacy of this medicine, and especially in intermittent and remittent fever. To these affections it seems particularly adapted, inasmuch as,

having the united properties of a diaphoretic and tonic, its use may be continued in the successive stages of the paroxysm, as well as during the apyrexia."—*Elements of Therapeutics and Materia Medica*, by N. Chapman. Vol. 2, p. 445.

Dr. Ansel W. Ives, of New York, the editor of the *Pharmacologia*, (of Dr. J. A. Paris,) adds his testimony to the correctness of Dr. Anderson's observations: "It was long ago used as a tonic by the aborigines of this country, but its properties were not fully investigated and its remedial character appreciated by the profession, till the publication of Dr. Andrew Anderson's excellent inaugural dissertation on the *Eupatorium Perfoliatum* in 1813. From that time to the present its reputation has been increasing. It is peculiarly valuable from the diversified effects that may be produced by it, by varying the preparation and the dose. These may be so modified as to secure its operation as a tonic, emetic, laxative, and sudorific; and from its effects in opening the secretions of the whole system, there is, perhaps, no other bitter or tonic, of equal activity, that can be exhibited in febrile affections, with so little danger of increasing excitement or producing congestion. In the year 1814, while resident physician to the New York Alms-house, I had frequent opportunities of testing its tonic properties, as it was enjoined, from motives of economy, upon the medical department of the institution, to substitute this article for the Peruvian Bark, when it could be done with safety to the patient. In many instances it proved an efficacious substitute. It is a valuable emetic in the early stage of autumnal intermittents."—*Pharmacologia, &c*, by J. A. Paris, M. D., &c., with additions, by Ansel W. Ives, M. D. New York, 1823. Vol. 11, p. 143.

Dr. Bigelow has prescribed an infusion of the *Eupatorium* in various instances to patients in the low stages of fever, where it has appeared instrumental in supporting the strength and promoting a moisture of the skin, without materially increasing the heat of the body. He has also found the cold infusion or decoction a serviceable tonic in loss of appetite and other symptoms of dyspepsia, as well as in general debility of the system.—*Am. Med. Botany*. Vol. 1, p. 37.

We hope that we will be excused for multiplying testimonies to the medicinal value of this plant. We believe that at the present time such an examination of its merits as embraced the views of the distinguished and reliable writers, would prove valuable as well as interesting. At some future time we hope to be able to present an extended chemical analysis of its constituents, together with numerous experiments upon its physiological and therapeutic action.

When employed as a tonic, from twenty to thirty grains of the powder may be taken three times a day; the cold infusion made in the proportion of 3j to Oj of water, may be taken as a tonic in doses of one to two fluid ounces.

When intended to act as an emetic, an ounce of the plant is boiled in a quart of water down to one pint, and this is taken in the dose of two fluid ounces every ten or twenty minutes, until the emetic effect is produced.

The warm infusion is said by Dr. Bigelow to be a convenient substitute for that of chamomile flowers in facilitating the operation of an emetic. Dr. Anderson gave the powder in the treatment of intermittent fever in doses of from 20 to 30 grains every second hour during the intermission.

In the treatment of both intermittent and remittent fever, the warm decoction prepared in the proportion of one ounce of the leaves boiled in a quart of water, may be administered in the dose of a wineglassful every two hours, or oftener, according to circumstances. Of course the amount administered will be regulated in great measure by its emetic and cathartic effects.

Dr. M. B. Beck says: "The bone set (*Eupatorium*) and the snake root, (*Serpentaria Virginiana*), have long been held in great repute, particularly in the treatment of all fevers of a low grade, whether intermittent, remittent or continued; and it is especially for these diseases, or the so-called typhoid and camp fevers, that I would press their merits upon the attention of the profession.

"About two years ago, I had some eight or ten cases at one time, on a farm, of what is generally called typhoid fever, and, after giving some mild mercurial, I used a cold decoction—I

prefer the decoction to the infusion—in the proportion of about half an ounce of the dried leaves of the bone-set and the same quantity of snake-root to a pint of water, giving of that a wine-glassful every three or four hours, day and night, *pro re nata*, with entire success; that is, I mean to say, I used no other tonic, and all the patients had a good recovery. This decoction as far as my limited experience goes, can be given when neither quinine nor cinchona may be admissible. It also makes an admirable menstruum for the *Tr. Cinchona Comp.*

NO. 17.—WILD HOREHOUND (*EUPATORIUM VERBENÆ FOLIUM*).

Botanical Description.—This species of the *Eupatorium* is an indigenous perennial plant, with an herbaceous stem, which is about two feet high, and supports sessile, distinct, ovate, acute, scabrous leaves, of which the lower are coarsely serrate at the base, the uppermost entire. The flowers are small, white, composed of five florets within each calyx, and arranged in the form of a corymb. It is in flower from August to November. The whole herb is employed as a medicine.—*U. S. Disp.*, p. 375.

Geographical Distribution.—It abounds in low wet places from New England to Georgia, and is especially abundant in the Southern States. I am not aware that any special examination of its chemical composition has ever been made.

Medical Properties and Uses.—This plant has been extensively employed in domestic practice in the treatment of intermittent fever, colds, and in debilitated states of the system. The medicinal properties of this plant appear to have been first brought prominently to the notice of the profession by the Hon. George Jones, President of the Georgia Medical Society, who thus describes its medical virtues: "It serves as an excellent substitute for the Peruvian bark, and, indeed, among the planters, in or near the sea-board, it supersedes the bark in the cure of fevers. It is tonic, diaphoretic, diuretic, and mildly cathartic, and does not oppress the stomach, as the bark is apt to do—hence it may often be exhibited where the cinchona is inadmissible. It is usually given in the form of infusion. One ounce of the dried leaves, infused into a quart of water, may be taken daily, in doses of from two to four ounces every hour or two. It may be advantageously combined with Peruvian bark, and, though it may sometimes fail of producing the desired effect, I think it well deserves a station among the articles of the *Materia Medica*." Dr. Chapman, in his *Therapeutics*, after

quoting the testimony of the President of the Georgia Medical Society, says: "In this sentiment I entirely coincide. My own practice has not afforded me many opportunities of using it, but I distinctly recollect that in Virginia, my *native State*, it was a common and efficacious remedy in the cases which have been mentioned—and to these I might add the catarrhal affections, or obstinate coughs—and also a bitter tonic, in weak and depraved states of the stomach. It was indeed in these latter cases that it appeared to display its best powers. The popular mode of using the horehound is as a tea; and sometimes, for coughs, it is made into a syrup or candy."—*Therapeutics*. Vol. 2, p. 447.

I have employed the wild horehound, both by itself and in conjunction with *Cornus Florida*, in the treatment of intermittent fever, colds and debilitated states of the system, with very good success. In my native county, Liberty, it has for many years (as far as I can ascertain from the oldest inhabitants, probably from the first settlement of this portion of Georgia), been employed extensively as a domestic remedy in fevers and colds.

It may be administered in somewhat larger doses than the preceding species.

NO. 18.—YELLOW JASMINE (*GELSEMINUM SEMPERVIRENS*).

According to Dr. Cleaveland, of Cincinnati, the value of the Yellow Jasmine in malarial fever was accidentally discovered by a planter, suffering under bilious fever, who took, by mistake, an infusion of the root of this plant, and was cured, although for a time he lost all muscular power. It has been announced as a speedy cure for intermittent fever, and has been largely used in this disease in the Western States.

Dr. Nash, of Norfolk, who has employed it in many cases of fever, affirms that it has produced the most desirable effects, neither age nor sex interfering with its exhibition; and whilst he does not rely solely upon it in all cases, especially those of a high grade, he still thinks that it is entitled to rank as a *coefficient* with *quinine* in fevers.

It has been chiefly used in the form of tincture.

Dr. J. A. Mayes, who has published a most valuable paper upon the Gelseminum, in the *Charleston Medical Journal and Review*, for March, 1857, recommends the following formula for the tincture: "Four ounces of the fresh root, clipped small, to one pint of diluted alcohol; macerate for fourteen days." Dose for adults from twenty to fifty drops, repeated as frequently as circumstances may require. Dr. Bachelor thus prepares the tincture: "A bottle is loosely filled with the bark of the fresh root; equal parts of whisky and water are added; and the bark is macerated for fourteen days; twenty to sixty drops of this infusion may be used at a dose, alone or combined with quinine."

Whether or not the Yellow Jasmine possesses any antiperiodic properties, it certainly possesses valuable sedative properties, and is capable, by controlling irregular nervous action, of aiding greatly the powers of nature in fever, and also the action of other remedies. The testimony to its sedative powers is unequivocal.

Dr. Mayes affirms that he has never been disappointed in a single instance in obtaining a direct sedative action from the use of the Gelseminum; "the patient being speedily quieted, although he may have been excessively agitated previous to its administration. Under its influence restlessness is soon succeeded by calm repose, and the excited, frequent pulse tempers down to tranquillity. These favorable impressions must be secured, however, by a frequent repetition of the dose, as its effects are not very durable, wearing off in two or three hours. It will be found necessary to administer the medicine in doses of from twenty to fifty drops, according to the severity of the symptoms, every two or three hours, until, under the influence of more radical remedies, the disease has been permanently controlled." And his desire, by the strong advocacy of this medicine, is "to bring it into notice as an admirable agent for controlling irregular nervous action, and bringing about in the system a state of repose favorable for obtaining the full action of other and more radical treatment."

Drs. Cleveland, Branch, Nash, Douglas, and others, have, in

like manner, testified to its narcotic, nervine, anti-spasmodic and sedative effects.

Dr. Durham, in a communication to the Medical Purveyor of the army, says: "The *Gelsemium Sempervirens* or Yellow Jasmine is, without doubt, one of the most potent febrifuge remedies known to the profession. This potency seems to depend on its relaxing and antispasmodic properties, as may be inferred from its efficacy in the treatment of tetanus, in controlling which no other known agent is comparable. It is now used and highly extolled by many respectable physicians, in all fevers except the congestive form. It is said by some to be the only agent yet discovered capable of subduing, in from two to twenty hours, and without the least possible injury to the patient, the most formidable and most complicated, as well as the most simple fevers, incident to our country and climate, quieting all nervous irritability and excitement, equalizing the circulation, promoting perspiration, and rectifying the various secretions without causing nausea, vomiting or purging, and is also adapted to any stage of the disease. It may follow any preceding treatment with safety. Its effects are clouded vision, double-sightedness, or even complete prostration and inability to open the eyes, and which pass off in a few hours, leaving the patient refreshed and completely restored; and as soon as the heaviness or partial closing of the eyes is induced, no more of the remedy is necessary, although those effects should follow the first dose. If carried to such an extent that the patient can not open his eyes, the relaxation may be too great for the system to recover from; its use should cease as soon as the symptoms abovenamed are produced.

The control of *Gelsemium* over the nervous system is complete. It may be used with advantage in all forms of neuralgia, nervous and bilious, headache, chorea, hemorrhage, rheumatism, gout and various other diseases. It is, however, in fevers that its good effects are most observable.

NO. 19.—*APOCYNUM CANNABINUM* (INDIAN HEMP).

This, in appropriate doses, is emetic, cathartic, diaphoretic,

diuretic and alterative. I have used it for twenty years in hepatic derangements, fevers, dropsy, scrofula, rheumatism, syphilis, and many other diseases, and can say most positively that I have found but few agents, in the certainty and promptness of whose actions I have such confidence.

NO. 20.—CORALLORHIZA ODONTORHIZA (CORAL ROOT).

I believe from my own experience, and from the best sources of information accessible to me, that this is the most prompt and powerful diaphoretic yet discovered. Diaphoresis follows its administration without any increase in the heart's action. As a diaphoretic in all fevers and inflammatory diseases, it has no equal. Its good effects in low stages of fevers are very marked. Its properties are probably diaphoretic, febrifuge, sedative and tonic. It has been used with good effect in cramps, flatulency, erysipelas, pleurisy, night sweats, &c.

In combination with the *Discorea Villosa*, it is almost a specific in flatulent and bilious colic. For the relief of after-pains, suppression of lochia, and the febrile symptoms, by which these are sometimes accompanied, there is no known agent superior or equal to it. It relieves fever without producing debility.

NO. 21.—HYDRASTIS CANADENSIS (BLOOD ROOT).

Dr. W. W. Durham says: This is a most powerful tonic. In the treatment of diseased mucous membranes I know no substitute for it. With its peculiar action on mucous membranes I have been acquainted more than twenty years. Combined with *Geranium Maculatum*, *Liriodendron Tulipifera* and *Rhus Villosus*, in decoction, or tincture, it is an invaluable remedy in chronic diarrhoea and dysentery. In all chronic affections of the mucous membrane of the stomach and bowels, it is a most valuable remedy.

In gonorrhoea and gleet, I consider it to be almost a specific. In these latter diseases, I sometimes find it advisable to combine a few grains of chloride of zinc to the ounce of tincture. I have used it for years in gonorrhoea and gleet, and have never failed to cure when my directions were followed. It is equally potent in leucorrhoea. Externally I have used it with much success in

ophthalmic diseases. Whenever a tonic is needed Hydrastis is applicable.

NO. 22.—*ASCLEPIAS SYRIACA* (COMMON MILK WEED).

This species of the *Asclepias* is very common in the United States, growing in sandy fields, on the road sides, and on the banks of streams from New England to Georgia. It flowers in July and August. The root is the part used in medicine.

Dr. Richard S. Cauthorn, of Richmond, Va., has given the root of this plant with success in six cases of intermittent fever.

Dr. Cauthorn has used the root in the form of pills, containing two or three grains, sometimes combined with capsicum, sometimes given alone. A cure has followed the use of one dozen of the pills, two having been taken at intervals of every two or three hours. He affirms that the root of this plant produces none of the distressing symptoms which often attend the administration of quinine. It is worthy of a more extended trial.

TREATMENT OF CHRONIC DYSENTERY AND DIARRHEA.

By E. S. FRAZER, M. D., St. Louis.

In proceeding to give my treatment of Chronic Dysentery and Diarrhea, I propose giving only the treatment proper, passing over symptoms, pathology, &c. Let me, at the outset, premise by saying the treatment is only applicable to the very last or purely chronic conditions of the above diseases.

I commence the treatment by giving two large tablespoonfuls of the decoction of simaruba every four hours and one large tablespoonful of Hope's mixture between each dose of the simaruba, or, in other words, I give the two preparations named above in the doses named every two hours—taking the same medicine only every four hours. During the administration of these remedies, and for some weeks after their discontinuance, I give an infusion of frostwort—a medium-sized wineglassful of the tea every two or three hours. I prepare the tea by adding one quart of boiling water to one ounce of the frostwort.

I persevere in the above treatment until the bowels are corrected, when, if the patient be anemic, as usually happens in such cases, I give in connection with the frostwort tea, the Syr. Proto. Nitrate of Iron twenty drops three or four times a day for two or three weeks.

During the progress of the case the patient should be restricted to a milk diet; indeed, in the more aggravated cases, I do not permit them to use any other diet whatever, not even a crumb of bread. I deem it of the utmost importance that the bowels remain perfectly at rest.

Below I give the recipes as prepared for me by Mr. Eugene S. Massot, Druggist, at corner of Spruce and Fourth streets. I consider it of the greatest importance, in the treatment of the above diseases, that the medicines should be fresh and pure, and prepared with the greatest care and circumspection.

The following is my formulæ for making the Compound Infusion of Simaruba :

R. Simaruba Bark (bruised)	-	-	-	-	3vj
Boiling water, q. s. to make	312	of the infusion ;			
strain and add Holland Gin,	-	-	-		3iv
Loaf Sugar,	-	-	-	-	3ij
Bottle for use.					

I also append the following account of the celebrated Hope's Nitrous Acid Mixture, taken from the *Edinburg Medical and Surgical Journal*, January, 1824, entitled: "*Observations on the powerful effects of a mixture containing Nitrous Acid and Opium in curing Dysentery, Cholera and Diarrhea, by Thomas Hope, Esq., Surgeon, Chatham*": More than 26 years ago, when attending a case of Dysentery, in which the usual remedies had been prescribed in vain, the patient determined on his own accord to take a medicine I had sent for his nurse, who was worn out with attention to her charge, and complained of excessive thirst. It occurred to me to give an acid to alleviate her complaint, and in order to obviate any unpleasant effects to join opium with it. I accordingly sent the following:

R. Acid Nitrosi,	-	-	-	-	-	-	-	3ii
Ext. Opii,	-	-	-	-	-	-	-	grs. ij
Aqua,	-	-	-	-	-	-	-	3ij M.

Cap. cochl minus ter quarterve in die,

And the patient with Dysentery having taken some of this medicine the effect produced was so great that it no less surprised him, who by a continuance of it recovered, than it did myself.

The form of the medicine, as I used it in all the cases referred to, is as follows :

R. Acid Nitrosi,	-	-	-	-	-	-	3i
Mist. Camphor,	-	-	-	-	-	-	3viiij
Misce et adde							
Tinct Opii.	-	-	-	-	-	-	glt xl

Sig : One-fourth part to be taken every three or four hours.

In chronic Dysentery the dose of two ounces, three times a day, is quite sufficient. The remedy is grateful to the taste, abates thirst, soon removes the intensity of pain, and procures, in general, a speedy and permanent relief. No previous preparation is required for taking it, nor any other care whilst taking it, except the keeping of the hands and feet warm, preserving the body as much as possible from exposure to extreme cold or currents of air, and making use of warm barley-water or thin gruel and a diet of sago or tapioca. It is necessary to mention that the remedy, the good effects of which I now detail, is Nitrous Acid, with Opium—not Nitric Acid, with opium. I have not found Nitric Acid, with Opium, to produce any good effect ; for, having expended my Nitrous Acid, I sent to a chemist for a fresh supply, who, by mistake, sent me Nitric Acid, which I used merely by way of trial, but found it not in any beneficial to my patients.

In conclusion, I can say to my professional brethren, that no treatment by me, or under my observation, approximates the success of this in all the purely chronic cases of Dysentery and Diarrhea.

A CASE OF INDOLENT ULCERATION, INVOLVING ALMOST THE ENTIRE LEG IN ITS CIRCUMFERENCE, INCLUDING THE ANKLE JOINT—AMPUTATION AND RAPID RECOVERY.

By T. CHALMERS DOW, M. D.

Was called October 10th to see Phillis B., a respectable colored woman, aged about forty years. General health remarkably good, the mother of one child, now grown. On examination, discovered extensive ulcerations reaching from below the ankle joint to within a few inches of the knee. The former was seriously involved, yet locomotion, even to great distances, was still kept up, though the joint was incapable of active or passive motion. She can attribute the affection to no exciting cause; has received no blow or wound, nor has she been the subject of any disease by which this affliction could have been predisposed. The inception of this rather anomalous case was first noticed about five years ago, in a little pimple, as it were, making its appearance on the shin, which soon resulted in a small ulcer, and this was but the prelude to similar involvement of almost the entire right inferior extremity below the knee. During this period she has suffered constantly from persistent pain, of a dull character, which, at intervals, would be succeeded by sharp, lancinating twinges. Loss of rest, and her agonizing sufferings, made her look very wan and feeble; otherwise her condition was favorable for operating. The discharge from the large ulcerated surface was profuse in an ichorous fetid pus, requiring almost unintermitting ablution. She had consulted many physicians, whose advice and treatment failed to palliate her affliction, or retard the disease. She has ever been an active, industrious woman, and has only been able to procure rest from opiates. The internal malleolus could not be distinguished; in its stead, a large cavity existed, constantly discharging pus. She has lately confined her treatment to cold water dressing exclusively.

Prof. Paul F. Eve, now of the Missouri Medical College, and other professional gentlemen concurring in the opinion, that amputation afforded the only possible means of relief, this was accordingly performed in their presence on the 12th of October, below the tubercle of the tibia, by the antero posterior flap

method, and the surface presented by the division being unusually healthy in appearance. The usual dressings were employed, and the stump has literally healed by the first intention, strange to say, no suppuration occurring during her speedy convalescence. The crystals of carbolic acid dissolved in linseed oil have been used as an application to the stump, with decided benefit—an auxiliary of value also as a disinfectant. Discharged the case three weeks after operation, patient moving about the room, from chair to chair, with the greatest ease, and has already decided to procure an artificial limb.

A CASE OF PLACENTA—PRÆVIA.

Reported by J. P. CHEANEY, M. D., New Market, Mo.

Early on the second day of the present month, I was requested to visit a lady living eight miles in the country, who, the messenger stated, was in confinement, with some abnormal condition present, the nature of which he did not know. I accordingly hastened to the patient, taking a case of obstetrical instruments with me, for use if necessary. I found my venerable professional friend, Dr. Robinson, of Ridgely, in attendance, having been with the patient for the past 48 hours, and having, in the meantime, before my arrival, had the benefit of the counsel of our mutual friend Dr. E. McD. Coffey, of Camden Point. Dr. R. gave me the following history of the case before I visited the room of the patient :

Mrs. W., a stout and healthy lady, the mother of three or four children, was pregnant, and at the end of the eighth month, on the first of September, at which time she received a hurt from the kick of a cow, but received no immediate ill consequences from it ; however, in a few days, she had a copious hemorrhage from the womb, which continued more or less copiously from that time until two days ago, when it became so profuse that medical advice was sought.

There being no indications of labor present, and being wholly unable to determine from what cause the hemorrhage continued,

the medical attendants used various means for its arrest, but without any permanent success, the patient all the while sinking into dangerous exhaustion.

I entered the patient's room and found her condition pitiable in the extreme—face white and bloodless, and covered with cold perspiration; radial pulse, wholly imperceptible; the bed, bed clothing, and everything about the room, even to the floor, under the bed, completely saturated with blood. The patient, indifferent to everything which was transpiring round her, presented no signs of labor, and had abandoned all hope of recovery. A vaginal examination now discovered the os uteri soft and yielding, through which I insinuated the index finger and found what I had already supposed—the Placenta presenting, apparently centrally located. This discovery was immediately communicated to my friend Dr. R., and it was at once decided to make an effort at immediate delivery, by turning. On repairing to the patient again, however, I bethought myself of Lee's method of rupturing the membranes, and thus setting up uterine action. I therefore immediately passed my finger through the placenta, felt the fetal membranes, and ruptured them, which was followed by the discharge of an *enormous quantity* of black, offensive amniotic fluid—pain immediately came on, the hemorrhage ceased, and with my persistent effort, and a liberal supply of ergot and brandy, the dilatation was completed and the child's head resting on the perineum in less than half an hour. Fearing to tax the efforts of the exhausted mother further, I applied the forceps and completed the delivery without trouble. The child was dead, but as it had all appearances of having only recently been living, all possible was done for its restoration, but without any good effect. The placenta was duly removed, but was so mutilated that we could learn nothing as to its abnormal detachment.

The woman reacted in a few hours, under the proper administration of stimulants and aliment, and made a good recovery under the ordinary treatment.

VACCINATION.

By KIMBAL FAVOR, M. D.

[Read before the San Francisco Medical Society.]

Probably no disease ever affected the human family more contagious in its nature, more loathsome in its effects, and more generally fatal, than small-pox was before the discovery of vaccination. It was more fatal to armies than the sword—followed them in their marches—was propagated by them wherever they went, and wherever planted spread with astonishing rapidity and fatality. No age, sex, or condition was exempt from its ravages; no sanitary conditions were capable of preventing its spread.

It is affirmed that it existed in China and Hindostan more than one thousand years before the birth of Christ. In 1517 it was imported to the West Indies, and appeared for the first time in the New World. Three years later it was imported to Mexico, and spread with such desolation that within three years, according to history, three and a half millions of people were destroyed in that kingdom alone. It was introduced into Iceland in 1707, and more than one-fourth of the whole population of the island was carried off by its ravages. It reached Greenland in 1783, and nearly depopulated the country. A means of protecting the human system from a disease so loathsome and so dangerous justly excites the profound attention of all medical men, and deeply interests the whole human family.

To this intelligent audience it is unnecessary to give a history of vaccination. The millions of human lives and incalculable amount of human suffering saved by it attest its value. The gift to Dr. Jenner by the British Parliament of £30,000 sterling was but a small acknowledgment of the unspeakable benefit he had conferred upon mankind.

The fourteenth of May, 1796, was the birthday of vaccination. On that day matter was taken from the hand of Sarah Nelmes, who had been infected by milking her master's cows, and inserted into the arms of James Phipps, a healthy boy about eight years old. He went through the disease in a regular and satisfactory manner. But the most interesting part of the trial

remained to be performed. It was needful to ascertain whether he was secure from the contagion of small-pox.

This point, so full of anxiety to Dr. Jenner, was fairly put to issue on the first of the following July. Variolous matter immediately taken from a pustule was carefully inserted by several incisions, but no disease followed. Having collected a sufficient amount of proofs, Dr. Jenner, in June, 1798, published his essay entitled, "Enquiry into the Causes and Effects of the Variola Vaccina," in which he set forth these proofs with such effect as to excite immediate attention, and to enlist the enthusiastic co-operation of numerous individuals. Objections against vaccination, some of them hypothetical, some foolish, were of course raised, as they are raised against every innovation. But new evidence in its favor rapidly accumulated. It triumphed over all cavils, and in six years from its first promulgation the discovery was known in every part of the civilized world.

Having premised thus much respecting variola and vaccinia, we will proceed to the main object of our inquiry, and discuss the following questions :

FIRST.—What is the vaccine disease ?

SECOND.—Does it protect the human system against small-pox, and to what extent ?

THIRD.—What are the conditions requisite to obtain its fullest protection ?

FOURTH.—Is there any danger attending vaccination, and if so, what ?

Different views have been held by medical men respecting the proper answer to the first question. Some have held that cow-pox is a disease *sui generis* : the mass of medical men, however, consider it nothing more or less than small-pox, modified and rendered milder and non-contagious by having passed through the cow. That the cow sometimes contracts small-pox from man is now well known. Let us now examine the evidence on that point.

The small-pox had been prevalent in the village of Oakly, England, in September, 1840. The last three persons attacked were two women and a child. The cottages in which these

three persons resided during their illness were situated on each side of, and closely connected with, a long, narrow meadow, comprising scarcely two acres. One of the women, though thickly covered with pustules, was not confined to her bed after the full development of the eruption, but frequently crossed the meadow to visit the other patients, the woman and child, the former being in great danger with the complaint and malignant form of the disease. She died on the seventh of September. The intercourse between the cottages across the meadow was continued after this event. On the following day the wearing apparel of the deceased, the bed clothes, bedding, etc., of both patients were exposed for purification on the hedges bounding the meadow. The chaff of the child's bed was thrown into the ditch, and the flock of the deceased woman's bed was strewed about on the grass within the meadow, where it was exposed and turned every night, and for several hours during the day, until the eighteenth of September, eleven days. On that day eight milch cows and two young steers were turned into the meadow to graze. The proprietor and milkers positively declare that the animals were in perfect health on their first entering the meadow, but, within twelve or fourteen days after that event, five of the cows appeared to have heat and tenderness of the teats, upon which, imbedded in the skin, were distinctly felt small, hard pimples, which daily increased in magnitude and tenderness, and in a week or ten days rose into blisters and quickly ran into brown and blackish scabs.

At this period, when the teats were blistered and swollen and very tender, the constitutional symptoms were first observed, viz.: sudden sinking or loss of milk; dribbling of saliva from the mouth, and frequent inflation and retraction of the cheeks; starving of the coat; tucking up of the limbs and sticking up of the back; and rapid loss of flesh. The process of milking was now very difficult, disagreeable, and even dangerous; and on the 14th October, the middle of the third week, the detachment of the crusts and loose cuticle, and the abundant discharge of pus on attempting to milk, compelled the milkers to desist for the purpose of washing their hands. Soon after this period the

cows became by degrees more and more tranquil, the tenderness of the teats subsided, and at length the animals recovered their health.

Another circumstance worthy of remark is that one of the steers was affected with the same disease, which shows that it was not produced by local irritation of the teats of the cows, but by some cause to which the steer was likewise exposed.

It is also recorded that Dr. Sunderland, of Bremen, communicated the small pox to cows, by covering them with sheets between which persons fatally affected with that disease had lain. These experiments were successful in a few cases, after many trials.

If, then, cows may take the small-pox in the natural way, we may reasonably infer that it may be communicated to them by inoculation. Facts are not wanting which prove this to be the case. Dr. Waterhouse, of Cambridge, Mass., in a letter to the celebrated Jenner, says: At one of our periodical vaccinations, which occur in New England once in eight or nine years, several people drove their cows to a hospital near a populous village, in order that their families might have the daily benefit of their milk. These cows were milked by persons in all stages of small-pox. The consequence was that the cows had an eruptive disorder on their teats and udders, so like the small-pox pustules that every one in the hospital, as well as the physician, declared the cows had the small-pox. This was doubtless produced by inoculation from the hands of the milkers.

It is stated by Dr. Michel, in an essay read before the College of Physicians in 1828, that vaccine matter having failed in Egypt, medical gentlemen were led to institute certain experiments, by which it has been discovered that by inoculating the cow with small-pox from the human body, fine active vaccine virus is produced. Accounts have appeared in the medical journals from time to time of similar experiments having been performed with success, not only upon the cow, but also upon other animals.

Thus we see that the cow may have small-pox, contracted by contagion or inoculation. The fact is universally known

among medical men that lymph taken from the small-pox pustule in the cow is the source of the kine-pox in man. Sarah Nelmes, from whom Jenner took the first matter he experimented with, doubtless contracted the disease by inoculation, in milking her master's cows. Since that time many persons have inoculated the cow with small-pox, and produced the vaccine disease in man with matter thus obtained from the vesicles on the cow: therefore we think we are justified in the conclusion that kine-pox and small-pox, though different in grade, are virtually the same disease.

Let us now inquire, "Does kine-pox protect the system against small-pox, and to what extent?"

It may seem superfluous to discuss this question, which the whole medical profession and the world regard as settled. It is a fact well known that by vaccination small-pox is now prevented from ever raging as an epidemic in armies, ships, jails, schools, poor-houses, or prisons. Wherever it appears, it is speedily checked by the use of this potent agent; yet in practice we find that vast numbers of vaccinated persons have small-pox in a mild form [varioid]. Such cases are notoriously common. We see them in every variolous epidemic, but it is upon the statistics of the large small-pox hospitals that we must principally depend for information on this point. I shall refer to but one, the London Hospital at Highgate, the largest probably in the world. In the year 1860 there were in that institution 858 cases of small-pox. Of these, 160 had occurred to unvaccinated persons, 697 to persons who had been vaccinated, and 1 to a person who had previously inoculated small-pox. Thus we see that more than four-fifths of all the cases for the year were post-vaccinated cases.

It likewise appears from Mr. Marson's report in 1860 that during the preceding twenty-five years more than six thousand cases of post-vaccinal small-pox were treated.

Thus we are forced to the conclusion that a vast number of vaccinated persons are unprotected by the operation, or else they have lost the protection they once possessed. It therefore is an interesting and important question whether the non-protection

of so many of the vaccinated is unavoidable, or whether it is because the operation has been imperfectly performed. In considering this question let us again refer to statistics.

Mr. Marson, Resident Surgeon of the Small-Pox and Vaccination Hospital at Highgate, London, whose experience in variola is probably [unequaled by that of any living practitioner, prepared for Mr. Simon, of the privy council, the following information upon the evidence of security or danger to be inferred from the number of vaccine cicatrices. His information is derived from data covering six thousand cases of post-vaccinal small-pox, and running through twenty-five years of service. From his extensive tables, as well as from similar reports from other institutions, it appears that of those attacked with the disease who have never been vaccinated, 85½ per cent. die. Of those vaccinated,

Having 1 Vaccine Scar,	7½ per cent. die
“ 2 “	Scars, 4½ “ “ “
“ 3 “	“ 1½ “ “ “
“ 4 or more “	“ ¼ “ “ “

In other words, two scars protect those who have varioloid from death nearly twice as much as one scar—three scars more than four times as much, and four scars ten times as much. Thus we learn from the highest statistical authority in the world that four well defined vesicles, such as will leave permanent scars, are necessary to afford the human system the highest protection from death, and we may reasonably infer also from contagion.

Now, if it is the case, as I believe it is, that the great mass of the people vaccinated have but one vaccine scar, are we not justifiable in the conclusion that one reason why so many vaccinated persons have varioloid is because they have had an insufficient number of vaccine vesicles; and that to secure the highest degree of protection, as many as four should be produced?

But there are other conditions necessary to secure the highest degree of protection. It is not necessary barely that the individual should have vesicles—they must be *vaccine* vesicles. Persons who have had varioloid, or persons who have contracted the vaccine disease in milking, and perhaps never knew it—

persons whose mothers had variola or vaccinia during pregnancy with them, are insusceptible to the full action of the vaccine virus. Yet in all these classes, *imperfect* vaccinal vesicles may sometimes be produced ; vesicles which may perhaps reproduce their like, but afford no protection.

Now, when we consider that many persons vaccinate themselves and others, who are incapable of distinguishing a genuine from a spurious vesicle, can we wonder that a vast number are supposed to be protected by vaccination who have no protection at all, or if any, one which only slightly modifies, and does not prevent the taking of small-pox? Erasmus Wilson, speaking upon this subject, says : " But as the attention necessary for the assurance of this condition has, unfortunately, in many cases, been omitted, much spurious lymph has been mingled with that derived from the original source, and, as a consequence, small-pox after vaccination has become more frequent, and vaccination has fallen into disrepute."

Another condition necessary to insure is that at least one of the vesicles produced by vaccination shall have been permitted to remain unbroken and uninjured, until the natural vaccine crust shall have been formed, and shall have fallen in the natural course. On this point Wilson says : " That the vaccine pock shall pass regularly through its course, is the most important of all the conditions requisite for the success of vaccination. Jenner especially pointed out the necessity of this rule, for he perceived that its neglect might lead to the most serious results. That neglect has, I fear, very extensively existed, and many of the distressing consequences under which we now suffer are referable to it."

When all these conditions have been fulfilled, vaccination is perfect, and the individual is secure from having small-pox for many years, probably for life.

I was prepared with statistics showing the danger of syphilis and various cutaneous diseases being communicated by vaccination ; also, with statistics showing the disastrous results that have followed the vaccination of persons in a feeble state of health, with a vitiated or impoverished condition of the

blood ; and had also intended to make some remarks upon revaccination ; also, upon the selection and preservation of vaccine matter—but the length of this paper and the want of time prevented me from embodying them here. I will therefore close by summing up the following conclusions :

1st. That kine-pox and small-pox are the same disease ; that the former is the latter modified, rendered milder and non-contagious by having passed through the cow : that when it protects the vaccinated, it is upon the well known principle that the human system is subject to variola but once.

2d. That, if it is not an absolute protective against small-pox, it is so near it that the vaccinated may be considered insusceptible to that disease for years, perhaps for life.

3d. To insure perfect protection, there must be as many as four genuine vaccine vesicles, and one of them at least must go through all its stages without being disturbed.

4th. That when vaccination is properly performed, with *pure vaccine matter*, upon a healthy subject, it is free from any danger to the person vaccinated.

5th. That vaccination with matter taken from an imperfectly developed vesicle can not be relied upon as affording any protection.

6th. That vaccination with matter taken from a patient affected with syphilis in any of its stages, or from a person affected with a cutaneous disease, is liable to produce a similar disease in the person vaccinated.

7th. That vaccination of a person suffering from a vitiated or impoverished condition of the blood, even though pure vaccine matter is used, is sometimes followed with very serious results.

8th. That where doubt exists that an individual is protected, revaccination will insure protection.—*Pacific Medical and Surgical Journal.*

THE ADMINISTRATION OF DRUGS.

The following very excellent suggestions on the administration of medicines occur in an address of Dr. T. King Chambers, delivered at the recent meeting of the British Medical Association :

"I wish to offer a few suggestions concerning the administration of medicines, which may tend to make this daily business of ours more available in increasing the therapeutical science : (1.) Let us aim at giving only *one drug at a time*. I do not say this is always possible ; but at all events let us keep the desire in our minds, and reckon a prescription good in an inverse ratio to the number of ingredients. This simplicity conduces not only to the good of science, but of our individual patients, for it soon makes us much more ready at suiting the special remedy to the special case. (2.) It is important, when we change our treatment, to allow a certain sufficient interval, different in different instances, between leaving off one medicine and beginning another. The experiments of Böcker and others have shown us, first, an action of the drug lasting after its apparent disappearance from the body, and, secondly, a reaction of the system opposite to, though weaker than, the original action. Advantage will accrue to the patient often from this rule, too. For instance : hyoscyamus, given for hypochondriasis or mental depression, may be left off almost directly it has begun to produce its beneficial effects, and those beneficial effects will still go on towards restored health. Hydrochlorate of strychnia will continue to invigorate the peristaltic motions of the stomach and intestines, so as to produce steady digestion and evacuation, for days after such a soluble salt must have passed away. (3.) It is advisable for each observer to have as short a pharmacopœia as possible. The best workmen use the fewest tools—aye, and those who use the fewest tools become the best workmen. They become more adroit with them, know them better, and are able to instruct others in their employment. (4.) The union and coöperation together of those who are working at the same subject are of incalculable value. Incalculable—because you have not tried it. The skeleton of the machinery exists in the British Medical Association. Why should not each Branch or group of Branches take up a drug, and let us know after two or three years their experience of its action ?"

This would result in some real and practical knowledge of the action and value of medicines, and not, as at present, depend on supposed and theoretical traditions.

A PROTEST AGAINST THE INDISCRIMINATE USE OF THE PROBE.

By C. M. FENN, M. D., San Francisco.

"Wounds of the cavities are to be severely let alone," was one of the earliest maxims inculcated by my distinguished preceptor. A not very limited experience, coupled with a careful investigation of the histories of others' cases, convinces me that the rule is a good one. The pernicious practice doubtless arises partly from the outside pressure of friends, partly from a desire on the part of the attending physician *to do something*. In the case of gunshot or other wounds involving the limbs or superficial tissues, the use of a probe, though often unnecessary, is perhaps admissible. But when the cranium, thorax, or abdomen is involved, it is not only useless, but criminal, to subject the patient to the torture of such an investigation. How many a gaping wound has been torn afresh by such a procedure! How many an artery, severed and effectually estopped by the ball or by the laceration of the knife, has bled anew from such unwarrantable interference!

On the one hand, it is well known that lead is quite innocuous to all the tissues, that the ball is rapidly enveloped in a cyst which prevents further encroachment. Why then the eagerness to extract the ball on all occasions?

Some months ago, in a case of gunshot wound of the thorax, I succeeded two physicians who had been discharged because of their inability to find the ball. Fortunately, perhaps, for me, the patient refused to be "punched any more," and I had only to watch a case of pleuro-pneumonia to its fatal termination. A necropsy revealed that the ball after passing through the inferior lobe of the right lung, was safely imbedded in the spinal column. The probe, however, by extensively lacerating the lung substance, had effected what the ball had not. In this connection I am reminded of a case which recently occurred in an interior town. At a necropsy upon a person who had been stabbed through the abdomen, no less than five physicians admitted that they had probed the wound. What must an already wounded peritoneum, or a lacerated intestine say to such treat-

ment? For one, I shall hail with joy the day when physicians have the moral courage to refuse to probe the wounds of the cavities.—*Pacific Medical and Surgical Journal*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A THEORETICAL AND PRACTICAL TREATISE ON MIDWIFERY, INCLUDING THE DISEASES OF PREGNANCY AND PARTURITION. By P. CAZEAUX. Revised and annotated by S. TARNIER. Fifth American edition, from the seventh French edition, with one hundred and seventy-five illustrations. Lindsay & Blackiston: Philadelphia, 1868.

We are pleased to announce the appearance of a new edition of this most excellent book. To say that it is one of the most complete and valuable works on the subject is but simple justice to its real merits. The present edition has been brought fully up to the times, and all modern discoveries and improvements incorporated.

The author died just as the sixth French edition of his work was exhausted, and to Prof. Tarnier was entrusted the preparing of the present edition for the press, and most ably has he performed his arduous and responsible task. We quote from his preface :

“ A classical book soon grows old in these days, and it was found impossible to bring out a new edition without subjecting it to the alterations demanded by the progress of science. I was charged with its preparation, and accepted the honor of the task with a full appreciation of its difficulties. I was left at liberty to remodel the work according to my judgment; to make the alterations which seemed to be required; to suppress some passages, and to introduce new ones.

“ Out of respect to Cazeaux's memory, it was decided that the printing should be done in two kinds of type: the larger for the old text, and the smaller for what I had written myself.

* * * I have, therefore, reviewed and corrected all parts of it with scrupulous care. * * * Chapters entirely new will be found in it on the diseases of pregnancy, the alterations

to which the placenta is subject, and the death of the child during intra-uterine life. * * * In the study of the accidents which are liable to complicate labor, I have profited by all the works published of late years, and in the account of hemorrhage, puerperal convulsions, and the indications which they present, will be found some new considerations."

The publishers deserve great credit for the very elegant manner in which the work is issued. The illustrations are very complete and well designed. We unhesitatingly recommend Professor Cazeaux's work to our readers; and to the medical student, especially, is it indispensable.

CONSTIPATED BOWELS, THE VARIOUS CAUSES AND THE DIFFERENT MEANS OF CURE. By S. B. BIRCH, M. D. Lindsay & Blackiston, 1868.

This is one of the most interesting books we have read for a long time. Perhaps no subject is of greater importance in the treatment of disease than the condition of the bowels. It is one of the first questions of the physician on visiting a patient, and most if not all of our usual diseases are complicated with or originate from some derangement of the stomach and bowels. The author says: "Constipation of the bowels, more frequently, perhaps, than any other bodily derangement, owes its extreme prevalence to perversion of natural laws. Two aspects of the subject are earnestly put forward. First, the necessity of carefully regarding the variety of causes, primary and secondary, which, in different cases, originate or retain a constipated habit; secondly, that essential point for effecting a cure in very obstinate cases—the avoidance of one-sided extremes in treatment. We have all too often seen cases of constipation rendered permanently chronic, and almost incurable by the abuse of medicines."

The work comprises all that is new on the subject, and should be carefully read by every practitioner.

A HANDBOOK OF VACCINATION. By EDWARD C. SEATON, M. D., Medical Inspector. Philadelphia: J. B. Lippincott & Co., 1868.

This valuable work is intended as a complete manual on this

very important subject, comprising the history of the cow pox and horse pox, and pocks in other animals, which have been considered analogous to them; also, the relation of them to human variola. It also contains full instructions for vaccination, together with all concerning the arrangements for the performance of vaccination and the maintenance of lymph-supply. In fact, the work is truly a hand-book in all that concerns vaccination. The author says: "In planning this book I had two purposes mainly in view, first, to provide a text book on the science and practice of vaccination for the use of my younger professional brethren, and of medical students, and secondly, to render such assistance as I thought I might be able to give to those engaged in the administration of the system of public vaccination."

In every respect has the author fulfilled his design, and we earnestly recommend it to our readers.

RETINITIS NYCTALOPICA. By PROF. ARLT, of Vienna. Translated by J. F. WEIGHTMAN, M. D. Philadelphia: Lindsay & Blackiston, 1868.

This little pamphlet comprises a complete treatise on the diagnosis and treatment of this troublesome disease. Persons suffering with this affliction complain of diminution in the sharpness of sight, and of a blinding in bright daylight. Its progress is insidious, yet fraught with danger. Hence the necessity of early treatment. The name of its illustrious author will readily commend the work to the oculist and physician.

ATLAS OF VENEREAL DISEASES. By A. COLLIERIER. Translated, with addition, by FREEMAN J. BUMSTEAD, M. D. Part 4. Philadelphia: Henry C. Lea. 1868.

The present number of this valuable contribution to Medico-Surgical Science is fully equal to the previous numbers, and we can only add additional words in its praise. The plates in the present are life-like; it is unquestionably the most elegant illustrated work ever published in this country. Part V, the last of the series, will soon be issued. Price per number, \$3.00.

Detroit Medical College.—We see that this institution is now fully organized, with an able corps of professors, and with facilities for teaching equal to any of our Western schools. The preliminary term commenced on November 2d, and the regular course will commence on February 2d, and continue until June 5th. We cordially wish the school every success.

VITAL STATISTICS OF ST. LOUIS.

For the month of October, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	229	Still Born.....	42
White Females.....	168	Under five years of age.....	197
Colored Males.....	18	Between five and twenty years...	82
Colored Females.....	9	Between twenty and forty years...	95
Born in the United States.....	328	Between forty and sixty years....	64
Born in Germany.....	68	Between sixty and eighty years...	81
Born in Ireland.....	61	Bet. eighty and one hundred y'rs	5
Born in other countries.....	14	Total.....	466

DISEASES.

Abcess.....	2	Fever Puerperal.....	8
Accidents.....	7	Fever Continued.....	8
Apoplexy.....	10	Fever Typhoid.....	22
Albuminuria.....	3	Gangrena.....	1
Atrophy.....	7	Gastritis.....	8
Bronchitis.....	6	Hepatitis.....	7
Burns.....	2	Hydrocephalus.....	7
Cancer.....	1	Hydrothorax.....	8
Carditis.....	8	Inflammation.....	2
Cerebritis.....	6	Jaundice.....	1
Cholera Morbus.....	1	Laryng'itis.....	8
Cholera Infantum.....	6	Marasmus.....	15
Convulsions.....	37	Meningitis.....	11
Congestion of Brain.....	14	Nephritis.....	2
Croup.....	8	Old Age.....	8
Debility.....	17	Paralysis.....	8
Dentition.....	7	Peritonitis.....	4
Disease of the Heart.....	8	Phthisis.....	45
Diarrhoea.....	21	Pneumonia.....	25
Diphtheria.....	4	Poison.....	1
Dropsy.....	3	Premature Birth.....	9
Drowned.....	1	Rheumatism.....	1
Dysentery.....	31	Scarlatina.....	2
Enteritis.....	2	Scrofula.....	2
Epilepsy.....	2	Suicide.....	1
Erysipelas.....	8	Syphilis.....	4
Fever Intermitent.....	18	Tetanus.....	6
Fever Remittent.....	9	Trismus.....	6

Total number of Deaths for October, 1866..... 895

Total number of Deaths for October, 1867..... 915

Total number of Deaths for October, 1868..... 466

THE
St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

OSCAR F. POTTER, M. D.

VOL. III. ST. LOUIS, DECEMBER 1, 1868. No. 19.

HISTORICAL NOTES UPON THE EMPLOYMENT OF ARSENIC AND OTHER ESCHAROTICS IN THE TREATMENT OF FOUL MALIGNANT, PHAGEDÆNIC AND GANGREOUS WOUNDS AND ULCERS.

By JOSEPH JONES, M. D., Professor of Chemistry in the Medical Department of the University of Louisiana, New Orleans.

Hippocrates was acquainted with foul malignant, phagedænic, gangrenous, ulcers, etc., gave many valuable precepts upon their treatment: Thus, he affirms, that gentle purging of the bowels, agrees with most ulcers, and in wounds of the head, belly or joints, when there is danger of gangrene; in such as require sutures, in phagedænic, spreading and in otherwise inveterate ulcers, he directs that the ulcer is to be frequently cleaned with a sponge, and then a clean piece of cloth is to be frequently applied to it, and in this way the medicine which it is supposed will agree with it, is to be applied, either with or without a bandage.

Amongst the astringent and caustic substances applied by Hippocrates to ulcers, may be recognized many used at the present day in the treatment of hospital gangrene, as arsenic, sulphates of iron and copper, acetate of copper, oxide and acetate of lead, carbonates of soda and alum.

The *Caricum* of Hippocrates, used as a caustic application to foul gangrenous ulcers, was composed of black, hellebore, sandarach, flakes of copper and lead, sulphur, arsenic and cantharides.

In the long list of remedies recommended by Pliny, in his

Natural History, for the treatment of foul phagedænic and gangrenous ulcers and wounds, many, as the blood and mashed flesh of dragons, toads, serpents, worms and fish, appear evidently to have been recommended from superstitious notions, rather than from any real therapeutic virtues; but we recognize many really powerful agents, as the salts of copper, iron, lead and arsenic.

The *Sandarach* of Hippocrates, of Pliny, and of the ancient physicians, is the realgar of the moderns, red opiment or red sulphuret of arsenic. Pliny describes the *Sandarach* as being found both in gold and silver mines. The redder it is, the more pure and friable, and the more powerful its odor, the better its quality. It is detergent, healing and corrosive, but is most remarkable for its septic properties. Applied topically with vinegar, it is curative of alopecia. It is also employed as an ingredient in ophthalmic preparations. Used with honey, it cleanses the fauces, and makes the voice more clear and harmonious. Taken with the food, in combination with turpentine, it is a pleasant cure for cough and asthma. In the form of a fumigation, also, with cedar, it has a remedial effect upon these complaints." B. xxxiv: C. 55. In combination with the wild *astaphis*, Pliny recommends it as a local application for itch, scabs and prurigo, and also for the destruction of vermin; in combination with black hellebore and copper filings, it removes warts. B. xvij: C. 47; B. xxij: C. 18. B. xxv: C. 22. B. xxvii: C. 62.

The ashes of blood, and of various plants, calcined shells and bones, as well as the excrement of various animals, recommended by Pliny as applications to ulcers, without doubt, possesses valuable properties from their alkaline and stimulant natures; and to this day, the dung of domestic animals, and especially of the cow, is used by the Africans, both in their native country, and in America, as an efficient poultice to boils, carbuncles and phagedænic ulcers.

The various admixtures of myrrh, frankincense and balsams, and the astringent principles of certain plants entering into the composition of the ointments recommended by Hippocrates,

Pliny, and the older writers on medicine, without doubt, exerted a most beneficial action upon unhealthy and foul ulcers, in virtue of their stimulant, astringent and antiseptic properties.

Bile of the beef, which entered into some of the local applications to ulcers, is used by the common people to the present day, and its virtues are probably due, in part, at least, to its alkaline properties, its tendency to assist or modify certain forms of digestion and fermentation.

The various remedies recommended by Hippocrates for the treatment of wounds and ulcers were, most probably, even in his day, of ancient origin, being derived, in part, at least, from the Egyptians, and from the *votive tablets* in the Temples of the *Asclepiadæ*, and the subsequent medical writers improved but little upon the formulæ of the father of medicine, and their most valuable remedies for the treatment of foul ulcers, owed their virtues to the preparations of arsenic, iron, copper, zinc, lead, mercury and silver. It is evident that the discovery of many of these compounds were due to the labors of the miners, and the workers in brass and iron, and the precious metals; and even the actual cautery dates back even beyond the days of Hippocrates, and in such high repute was this method of arresting certain forms of disease with the father of medicine, that he placed it above all other remedies in power, in his celebrated aphorism: "These diseases which medicines do not cure, iron cures; these which iron cannot cure, fire cures; and these which fire cannot cure, are to be reckoned incurable."

The surgeon of the present day might learn a valuable lesson from Hippocrates, and the older writers, as to the great value of wine, as a local application in the treatment of ulcers.

In those portions of the writings of Galen, Guido, and other ancient authors, which relate to the nature and treatment of putrid phagedænic and gangrenous wounds and ulcers, may be found frequent references to the potent remedies recommended by Hippocrates, viz: The actual cautery, and the salts of copper and arsenic.

Without doubt, the preparations of arsenic were the most potent of all the local applications employed by the ancients.

And in modern times, the attention of the profession has been directed to the great value of this agent in hospital gangrene by Surgeon H. Home, Blackadden, in his valuable "*Observation on the Phagedæna Gangrenosa.*"

The experience of this author is worthy of careful consideration in this connection, and we extract his observations upon the use of arsenic in the British service :

"Fowler's solution of arsenic is a medicine which is furnished to hospitals on foreign stations on account of its well known good effects, when used internally, in cases of inveterate intermittent fever. Its employment as an external application, was certainly never intended ; yet, if too strong for that purpose, it could readily be diluted ; and, if found too weak, it might be rendered stronger by evaporation, and thereby made to supply the want of what may be considered a more appropriate preparation."

"Having accordingly resolved upon making trial of this solution, I selected two severe cases in the inflammatory stage of the disease. One of them had originally received a superficial gun-shot wound on the inner side of the knee joint, but at this period the sore was upward of three inches in diameter, highly inflamed, the whole knee being swelled, and the pain excruciating, so as to make the patient cry out incessantly. The other had been wounded through the leg and thigh, but in every other respect, the state of his sores was similar to that of the former."

"Diluting the arsenical solution with an equal part of water, I commenced its use by applying it to the whole surface of the sores, by means of pieces of fine lint, having previously carefully removed the glutinous discharge. Each of the patients was then provided with a small gallipot, containing a quantity of the diluted solution and pieces of fine lint, cut into the shape, but a little larger, than the sores ; and they were ordered to keep their sores constantly moist with the solution, and to renew the lint, at least once every two hours. As this application occasioned a considerable degree of smarting, when first applied, they were each provided with an opiate pill, but accompanied with a strong recommendation not to use it if it could possibly

be avoided, and, by way of encouragement, they were promised a certain and speedy cure. On visiting my patients next morning, it was impossible not to be struck with a change in the expression of their countenance—from that of acute pain, mingled with despair, to that of ease and gratulation. Upon inquiry whether the instructions had been strictly adhered to, I was answered, "Yes; thank God, we feel now as if in a better world;" and upon examining their sores, I found them completely dried up, and covered with a dark, semi-transparent, and insensible blough, of a somewhat horny consistence. The smarting, which was occasioned by the solution when first applied, had ceased, without their having had recourse to the opiate pills; and the pain, with which they had been more or less tormented from the commencement of the disease, had also been removed, soon after the application of the solution. * * * *

"The further progress of the disease was evidently and completely arrested; and by suitable topical applications (to be afterward particularized) for assisting nature in throwing off the slough, and cicatrizing the sore, they were, in no great length of time, completely cured, without having used any internal medicine, further than what might be occasionally required to prevent constipation—and without any attention having been paid to the constitutional affection, which, indeed, disappeared of itself, almost immediately after the destruction of the morbid action of the sores. * * * *

"From this period the solution of arsenic continued to be employed with uniform success. Patients whose sores had resisted, as was said, almost every other treatment, were admitted from other hospitals, and cured by it; and it was also, I was informed, ultimately introduced into other hospitals, and proved equally successful."

Mr. Blockadder further states that the external application of the solution of arsenic was again resorted to with equal success, after the battle of Waterloo, in the British hospitals at Antwerp. (*Observations on Phagedæna Gangrenæ*, pp. 21, 25, 49, 58.)

This observer held the view that the arsenical solution was

more efficient than the actual cautery, and that it not only acted locally, but also constitutionally by absorption from the diseased surface.

The nitrate of the red oxide of mercury, and nitric acid, were much recommended, and seem to have been frequently applied locally as escharotics in cases of gangrene and foul ulcers, by surgeons in the sixteenth and seventeenth centuries.

The value of these remedies appears to have been most clearly demonstrated to the British surgeons by Dr. Roller, in 1797.

This physician, strongly impressed with the belief that a morbid poison was acting upon the foul ulcers in the Royal Artillery hospital of Woolwich, which, like the venereal poison, had the power of assimilation, and, if being absorbed, thus producing general effects on the system, and a reaction on the sore, determined to adopt local measures of treatment, consisting in the chemical destruction of the poison, and in exciting a new action.

"The oxygenated muriatic acid, and the nitrates of silver and mercury, were the applications employed, and lately the oxygenated muriatic acid gas.

"When either of these were applied four or five times, the little ulcer soon put on the suppurating stage, and granulated. They did not give pain in any degree, and it was of short continuance. While the ulcer was directly touched with the nitrated silver, the whole sore was moistened with a dilute solution of nitrated mercury, or mixture of oxygenated muriatic acid, in distilled water, after which the whole was covered with lint that had been previously moistened with æther or the oxygenated muriatic gas applied to the ulcer, and over the sore the dilute solution of nitrated mercury in distilled water.

"By these means, diligently persevered in, the poison and ulcer were destroyed, and the sore went on cicatrizing. The only failures were in those cases where the ulceration had so extended that the nitrated silver or oxygenated muriatic acid gas could not be completely employed. It is necessary to mention

that washing the sore with warm water was always previously performed."

A careful examination of the works of Blane Trotter and others, will show that up to the war in Portugal and Spain, in 1818, the British surgeons, as a general rule, did not use the actual cautery as was done pretty generally by the French, but treated the disease chiefly as a constitutional affection, by blood-letting, emetics and purgatives.

The indifferent success which attended its treatment by constitutional means and simple detergent applications, caused the surgeons of the British army to view it more as a local disease, capable of giving rise to some constitutional symptoms. A change of opinion, which was materially influenced by the knowledge that the French surgeons more generally considered with Ponteau, that it was local in the first instance, and treated it by the actual cautery.

The introduction of the mineral acids, not as then generally used, as stimulants or deterrents, but as caustics, into the English army, during the campaign in Spain, in 1818, under Lord Wellington, was due to Guthrie.

This distinguished surgeon affirms, that in his hands constitutional treatment, and every kind of simple, mild, detergent applications, always failed, unless accompanied by absolute separation, the utmost possible extent of ventilation, and the greatest possible attention to cleanliness, and not even then without great loss of parts in many instances.

This induced Guthrie, at Santander, in November and December, 1818, to try the mineral acids as caustics. In his hands this proceeding was always, however, accompanied by a constitutional treatment, regulated by the nature of the symptoms, which, at that station, were more benefited by bleeding. At Bilbao, in 1818, where caustic applications were most used, or only as deterrents, and blood-letting to the amount of two, three or four pounds employed, out of 972 cases of hospital gangrene thus treated, 887, or nearly one-half, died. Notwithstanding this fearful mortality, Dr. Boggie, who was stationed at Bilbao,

strongly advocated the exclusive constitutional treatment, and affirmed that the disease was arrested by blood-letting!

At Santander, where Mr. Guthrie introduced the mineral acids as caustics, out of 160 cases, 35, or less than one-fourth, died, and at Passages, where Blockadder employed the arsenical solution, only two deaths are recorded in 41 cases of hospital gangrene, or about one death in twenty cases.

These preparations of Hippocrates and the ancient physicians, which contained arsenic, as has been shown by modern researches, were both potent and valuable in the treatment of foul ulcers and hospital gangrene.

THE HISTORY OF EIGHT CASES OF PLACENTA PRÆVIA.

By T. GAILLARD THOMAS, M. D., Professor of Obstetrics and the Diseases of Women and Children in the College of Physicians and Surgeons, New York.

No variety of abnormal labor requires at the hands of the obstetrician more careful consideration, mature judgment and prompt action, than that which is complicated by unavoidable hemorrhage. The placenta being attached so near the os internum that the dilatation of this part necessarily involves its detachment, the very process by which the mother gives birth to her child, tends to destroy not only its, but her own life. Fortunately, placenta prævia is not of common occurrence. Many a practitioner will pursue his vocation for years without meeting with a case. Yet so serious are its results that, although it occurs not oftener than once in five hundred cases, which is the proportion computed as correct by some authors, it exerts a marked influence upon the statistics of obstetrics. According to the calculation of Sir James Simpson, based upon the analysis of 399 cases, one-third of the mothers and over one-half of the children are supposed to have been lost. The reasons for this great mortality are probably the following:

1st. The dilatation of the cervix, for the passage of the child, unavoidably exposes both mother and infant to great danger from placental detachment and hemorrhage.

2d. Repeated hemorrhages occurring during the ninth month, as the os internum dilates under the influence of painless uterine contractions, which then occur, the woman, at the time of labor, is usually exsanguinated, exhausted and depressed, both physically and mentally.

3d. Profuse flooding generally occurring with the commencement of labor, the medical attendant is often not at hand, and reaches his patient only after a serious loss of blood has occurred.

The dangers attendant upon the condition develop themselves most markedly in the first stage of labor, and death not unfrequently occurs before the os externum is dilated to a size not greater than a Spanish dollar. At this time surgical interference, if resorted to to accomplish delivery, often destroys the lives which it is intended to save. The hand forced too soon through a rigid os will often rupture its walls, while a delay, without the adoption of the means capable of controlling hemorrhage, will necessarily favor the occurrence of a fatal result.

On the other hand, should full dilatation of the os have taken place, and the patient be exhausted from sanguineous loss, the practice of rapid artificial delivery will not rarely be followed by fatal prostration.

There is no question, in my mind, of the fact that when it becomes the recognized practice to resort to premature delivery as a prophylactic measure in these cases, the statistics which have been quoted will be very much improved upon. By resorting to this measure, we should be dealing with a woman who is not exhausted by repeated hemorrhage; the obstetrician would be in attendance at the commencement of labor, and he would be able by hydrostatic pressure to control flooding, while the same pressure accomplished rapidly and certainly the first stage of labor.

When this step has not been deemed advisable, or, from any cause, labor has absolutely set in, complicated by unavoidable hemorrhage, there are two plans by which we may endeavor to save the lives of mother and child.

1st. We may alter the state of affairs at the cervix, so that dilatation may occur without hemorrhage.

2d. We may hasten the delivery of the child, so as to render a *gradual dilatation* of the cervix unnecessary.

The means at our command for accomplishing these indications may thus be tabulated and presented at a glance :

MEANS FOR PREVENTING HEMORRHAGE WHILE THE OS DILATES.

1. Distension of cervix by bags of water.
2. Evacuation of liquor amnii.
3. Partial detachment of placenta.
4. Complete detachment of placenta.
5. The tampon or colpeurynter.

MEANS FOR HASTENING DELIVERY OF CHILD.

1. Ergot.
2. Version.
3. Forceps.
4. Craniotomy.

The following cases will illustrate these remarks :

CASE 1. Mrs. W., aged 26, primipara, in good health, was suddenly taken with hemorrhage three weeks before full term. She sent for me in great haste, but being occupied, I was unable to go to her, and she was seen for me by my friend, Dr. Reynolds. He discovered that she had lost a few ounces of blood, but that the flow had ceased. Three days afterward she was again affected in the same way, the flow ceasing spontaneously. About a week after this she was taken during the night with a flow, which was so profuse as to result in partial syncope when she endeavored to walk across the room. I saw her early the next morning, found her flowing slightly, and upon vaginal examination succeeded in touching the edge of the placenta through the os, which was dilated to the size of a ten cent piece. Later in the day, Drs. Metcalfe and Reynolds saw her, and agreed in the propriety of premature delivery. In accordance with this consultation, at 7 P. M. I introduced into the cervix, with considerable difficulty and by the employment of some force, the smallest of Barnes' dilators. This in twenty minutes was followed by the next larger dilator, and in an hour by the largest. Dilatation was rapidly accomplished, but instead of removing

the largest bag, I left it in the cervix until 10 o'clock that night. Expulsive pains coming on at that time, I removed it, when the head rapidly engaged, and before morning Mrs. W. was safely delivered of a living girl. The placenta followed rapidly, and both mother and child did well.

Remarks.—In this case, although hemorrhage continued slightly throughout the labor, it never amounted to a sufficient quantity to endanger the lives of either mother or child. The implantation of the placenta being lateral, cessation of the flow occurred as the head advanced and made firm pressure against the bleeding surface.

As to the fact of the case being one of placenta prævia, there could be no doubt. The placenta was distinctly touched by Drs. Metcalfe, Reynolds and myself; one lip of the cervix was disproportionately developed and the placenta murmur was much more distinct over the symphysis than near the fundus.

CASE 2. Mrs. D., a lady over 40 years of age, whose last pregnancy had been completed fourteen years previously, was placed under my care by Dr. Metcalfe. She was an excessively nervous and hysterical woman, but in good health. About three weeks before full term she was taken with hemorrhages, which lasted for very short periods, recurred at intervals of four or five days, came on without assignable cause, and ceased without remedies. The cervix was not dilated, and no physical signs of placenta prævia could be detected, either by vaginal touch or auscultation. Dr. Metcalfe saw her in consultation, and as all the rational signs of placenta prævia were present, and our patient was suffering from the repeated losses, and was becoming extremely nervous and apprehensive, we concluded to bring on premature delivery. Accordingly at 11 A. M. I introduced a large sponge tent into the cervix, and at 3 or 4 P. M. removed it, and succeeded in inserting Barnes' smallest dilator. At 9 that night the cervix was fully dilated at the expense of very slight hemorrhage, and Dr. Metcalfe then being present, I removed the bag, intending to leave the case to nature, provided no flow occurred. Previously during the evening, upon changing the bags, I had distinctly touched the head as the presenting part,

but now to my surprise I found that the bag impinging on this part had caused the child to revolve in the liquor amnii, and that the breech was now within the os.

We decided under these circumstances to deliver at once. The patient being under the influence of ether, I drew down the legs and delivered a living female child. The placenta followed in fifteen minutes, and both patients did well, the child rapidly recovering from an injury to one of its legs, received during delivery.

Remarks.—In this case the placenta was very nearly centrally attached. At one side of the os internum, a space of only two fingers' breadth was free. Through this, digital examinations were made, and the hand pushed to seize the feet. The first stage being accomplished by means of hydrostatic dilators, no hemorrhage attended it; but without this means having been employed it is highly probable that profuse and dangerous flooding would have occurred.

CASE 3. Bright B., an Irish woman, in the lowest walks of life, was under the care of two of my students. Whether any premonitory hemorrhages had occurred I could not ascertain. When I saw her, the os was nearly fully dilated, and although considerable blood had flowed, the woman, who was quite robust, did not appear to be suffering from the loss. The placenta could be distinctly felt, laterally attached, but not very near the cervix. Feeling confident that evacuation of the liquor amnii would result in compression of the placenta by the head to such an extent as to check hemorrhage, I resorted to this plan, predicting with some confidence, that the child, whose heart beats could be heard, would be delivered alive.

These anticipations were only in part fulfilled. The hemorrhage was so much diminished that no further interference was necessary, but the child, which was delivered some hours afterward by the gentlemen in attendance, was still-born.

Remarks.—It appears to me that a better plan in this case would have been to have practiced version. The os was dilated, the liquor amnii present and the woman strong. All things were favorable so far as she was concerned, and I do not doubt that

by this operation we would have delivered a living child. This opinion I do not base upon my experience as to the foetal mortality after version, but upon the fact that the pelvis was so capacious, and the soft parts so relaxed, as to have warranted the belief that such a result would have occurred.

The woman, I believe, recovered without accident.

CASE 4. Mrs. L., a multipara, aged thirty-five years, was placed under my care by Dr. W. H. Van Buren. Although not yet advanced much beyond the seventh month of pregnancy, she had often-recurring attacks of hemorrhage, which behaved precisely like those of placenta prævia. The patient was intractable, fretful and unreasonable to such a degree that I found much difficulty in examining very completely, and to this circumstance I, in part, attribute the fact that no physical signs of the condition could be detected. After attending her for a week I was suddenly called to her, and found that she had lost so much blood as to be alarmingly prostrated. I at once introduced a Sims' speculum and applied a firm tampon of wet cotton. This was removed in twelve hours and replaced by another. Upon the removal of this, or rather some time before it, full doses of ergot were administered, and in a few hours a still-born child, with placenta and membranes, was cast off. The mother slowly recovered.

CASE 5. I was sent for in great haste by Dr. J. B. Reynolds to see with him Mrs. B., a very thin, delicate, primiparous woman, who, without premonitory hemorrhage, had been taken at the commencement of labor with alarming flooding. In his note Dr. Reynolds stated that he feared that the death of the patient would occur before my arrival, unless I made great haste.

Upon my arrival I found the patient very pale and almost pulseless. The os was dilated to about the size of a Spanish dollar, but was completely dilatable, and hemorrhage was going on actively. Upon consultation we agreed that forcible delivery in her prostrate condition would result in exhaustion and death, while the rigid and contracted state of the soft parts would offer little hope for saving the child. In preference to

immediate delivery we anæsthetized the patient with ether, and I, introducing my whole hand into the vagina, slowly but completely dilated the cervical canal, ripping off a portion of the placenta at its lowest point of attachment. Stimulants were then freely given, with opiates. The head, fortunately, soon descended, and the patient was delivered by Dr. Reynolds in about three hours. We had told the patient's friends that the child would be still-born, but, to his surprise, Dr. Reynolds found in it traces of life. He tells me that he resorted to active means of resuscitation for half an hour, before a distinct respiratory effort could be detected. At least, however, he succeeded in restoring it.

The mother made a very slow and tedious recovery.

Remarks.—In this case version could have been rapidly accomplished, when I saw the patient. I feel satisfied, however, that it would have destroyed the life of the mother, and I doubt whether the child would have been saved by the operation. The exhaustion which would have attended gradual dilatation by the water bags or tampon would have been highly prejudicial, and I am impressed with the conviction that the plan which was followed was the best which could have been chosen.

CASE 6. Dr. Metcalfe requested me to see, with him, Mrs. D. R., of whom he gave me the following history: She was a multipara, in good health, and in the eighth month of pregnancy. Without assignable cause she was effected by recurring hemorrhages of considerable violence, for which he had been forced to use the tampon. Upon my seeing her, we agreed to employ the colpeurynter, Barnes' dilators not being then in use, and it was faithfully tried. For a time it would control the flow, but it excited violent efforts of the abdominal muscles without bringing on labor.

In four or five days the patient became so much exhausted that we were apprehensive as to the result. The os was half dilated, fetal heat inaudible, and hemorrhage recurring at intervals. The patient was anæsthetized with ether, and Dr. Metcalfe passed his hand slowly into the cervix and removed the entire placenta.

After this, all flow ceased ; the child was delivered in twenty-four hours, and the patient recovered without a bad symptom.

CASE 7. I was called on by Dr. Charles F. Heywood to see Mrs. C., a multipara, who, during the first stage of labor was taken with a most alarming hemorrhage. Upon examination I found the os three-quarters dilated and quite dilatable, foetal heat audible, and woman not much prostrated, but beginning to show the effects of the rapid flow. With the sanction of Dr. Heywood I at once proceeded to turn, an easy operation, as everything was favorable, and delivered a living child. Both patients did well.

CASE 8. I was sent for by Dr. R., to see, in consultation with him, Mrs. B., multipara, 37 years of age, who was in labor with her fourth child. Her husband, who came to seek me, told me as we went to his house, that he had been in search of me two hours and a half, and that upon his starting out his wife was bleeding profusely. He likewise stated, that with her previous labors she had lost a great deal of blood, so that in the last her life had been considered in great danger.

Upon arriving at the bedside, I found the patient excessively pallid, her surface cool and covered with perspiration, and the pulse weak, but not very much accelerated. She complained of dizziness upon lifting the head from the mattress, and expressed herself as much exhausted. The uterus was not contracting with any force. Upon making a vaginal exploration, I found the vagina distended by a large clot, upon the removal of which there was a free flow of blood. The os was fully, or nearly fully, dilated, bag of water ruptured, and a large piece of placenta could be felt in the cervical canal.

Version could have been performed very easily, and as immediate relief was absolutely demanded, it, of course, suggested itself as the most promising resource. But so completely exhausted was the patient, that I felt very sure that the operation would destroy her life. For the child we had no hope, in view of the great loss which had occurred. Rather than risk the draught upon her vital forces, which was necessary for such a procedure, I proposed the removal of the entire placenta, which

would control the flow and give time for stimulation and nourishment before the delivery of the child. This being agreed to, I introduced my left hand into the vagina, and, carrying the thumb and two fingers into the uterus, easily detached and removed the placenta. The hemorrhage ceased at once, with the exception of a slight oozing, and in four hours the uterus expelled the child. At this time the patient was taken with a profuse flow, which, her physician informs me, he found impossible to control by any means, and in an hour and a quarter she died.

Remarks.—I have reflected a great deal over this unfortunate case, the result of which filled me with disappointment, as I was most sanguine for the mother's recovery, upon my leaving her after the operation. I feel that were I called to a similar case now, I should reason and act as I did then. Of version, under the existing circumstances, I have already fully expressed my opinion; all means calculated to act as mechanical hæmostatics would have been too tardy and incomplete in their effects, and too exhausting in their application, and the head was too high to be easily or surely reached by the forceps. The only other procedure which suggested itself to my mind was perforation and very cautious extraction of the child, and this would have exposed the patient so much to exhaustion, that I preferred the operation to which I so vainly resorted.—*American Journal of Obstetrics.*

TO RENDER PAPER AND PAPER-HANGINGS WATERPROOF.—Rischer recommends to size with a thin paste of glycerine and starch (equal parts), with which for colored paper at the same time the paint is applied, and afterwards with a solution of Japanese wax in five to six times its bulk of alcohol. About a scruple of wax is said to be sufficient to give a waterproof coating to a sheet of paper.

PUERPERAL CONVULSIONS.

Abstract of a Clinical Lecture delivered at Bellevue Hospital, By FORDYCE BARKER, M. D., Professor of Obstetrics and Diseases of Women and Children, Bellevue Hospital Medical College.

CASES I and II. *Puerperal Convulsions : Puerperal Mania : Convulsions in the Infant : Recovery of both Mother and Child.*—Bridget D., æt. 25, Irish, primipara. Admitted into hospital last July. Labia, vulve, and lower extremities then so much swollen as not to pit upon pressure. Frontal headache and pain in lumbar region on first admission. but all these symptoms soon disappeared. Neither casts nor albumen found in the urine previous to confinement, although several examinations were made. On the afternoon of September 16th, the patient was suddenly seized with a convulsion, characterized by all the usual phenomena, lasting five minutes, and leaving her in a semi-comatose condition. A more protracted convulsion followed about twenty minutes later. Dry cups were applied to the loins, and three drops of croton oil placed upon the tongue; chloroform was then administered freely, and continued whenever convulsions were threatened, until the labor ended. As, after a proper interval, the croton oil did not act, an enema of an ounce of castor oil, with three drops of croton oil and a pint of warm water, was given, which moved the bowels in about ten minutes. At 7 P. M. three convulsions occurred in rapid succession. During the intervals between them, the patient was semi-comatose, with pupils markedly contracted. No recurrence of the convulsions till 4 P. M. of the 17th, when three occurred rapidly. There was an intermission till 3 A. M. of the 18th, when three more occurred; and ten minutes after the last the child was suddenly expelled alive. The placenta soon came away; the uterus contracted well; and there was little hemorrhage. The mother had three convulsions after delivery; puerperal mania then developed and lasted nearly two days. She had since done well, had a good appetite, and complained only of headache. On the day of the first of the postpartum convulsions, the urine contained a small amount of albumen, but no casts. On the first day after delivery, the urine contained about twenty-five per cent. of albu-

men, and no casts. To-day, the albumen was barely appreciable. The treatment consisted in applying dry cups over the kidneys, after which the patient soon became conscious, and was able to swallow. Bitartrate of potassa, two drachms four times a day, was then given. For some days she had been taking two grains of sulphate of quinia, with fifteen drops of tincture of the chloride of iron, three times a day, and had been put upon nutritious diet. After delivery the child had a convulsion precisely similar to those of the mother, and in the course of two hours, two more. It had since done well, had had no more convulsions, nursed well, and was thriving.

Dr. Barker stated that fourteen years ago he had published a table of cases of puerperal convulsions, which he had collected from all the sources accessible to him, and in it had shown that 32 per cent. of all cases which occurred before and during labor, ended fatally, and 22 per cent. of those after delivery. The statistics of the present day would show that the fatality had been greatly diminished, owing to our increased knowledge of the pathology of the affection, and to improved therapeutical measures. The mortality was probably diminished 50 per cent.

Apoplexy did not produce convulsions, except by pressure; but it might be a consequence of them, and a very dangerous one. Dr. Marshall Hall had first clearly explained how convulsions may produce apoplexy. The convulsive fit has the effect of interrupting the circulation: first, by direct pressure of the platysma myoides on the jugular veins, preventing the return of the blood from the brain; second, by the spasm of the glottis impeding respiration, and preventing the passage of venous blood into the lungs; third, by the pressure on the venous circulation of the extremities, the blood, by the spasmodic contractions of all the voluntary muscles, being forced too rapidly forward into the great central trunks; fourth, by the increased pressure on the venous circulation in the uterus, in consequence of its more powerful contractions.

On the ætiology of convulsions, Dr. Barker continued:

Physiology has demonstrated that all convulsions must arise from some irritation of the true spinal system—which includes the

spinal marrow within the theca vertebralis, the medulla oblongata, and the corpora quadrigemina—and that no irritation of the cerebral system—that is, of the brain and cerebellum and that part of the spinal cord which conveys sensation and voluntary motion to and from the brain—will produce them. These causes may be divided into two classes: 1st, those which act directly on the spinal system, or the centric causes, as they have been termed; and, 2d, those which act indirectly, or the reflex causes. The centric causes are said to be: 1st, pressure upon some part of the true spinal system, from congestion, from serous effusion, or from coagula: 2d, deficient nutrition of the spinal system, from anæmia; and, 3d, toxæmia. The reflex causes are those which produce irritation of the incident or excitator nerves, that react upon the spinal system; as morbid excitation of the peripheral nerves of any of the vital organs of the body.

For some years past, the prevailing opinion, with a great majority of writers on this subject, has been, that puerperal convulsions result, in a very large proportion of cases, from toxæmia, the special poison being uræmic, and that this is demonstrated by the presence of albumen in the urine. I take it for granted that none of you suppose that albuminuria, that is, albumen in the urine, is the cause of the convulsions; but the belief has been, that, where this is found, the urea is retained in the blood, and that this substance is, directly, or by its decomposition, a poison which produces a most deleterious and profound impression on the nervous system. Many eminent authorities have gone so far as to assert that, excluding hysterical convulsions occurring in puerperal women, the cases not due to this cause, are exceptional. Considered with reference to their cause, they, in fact, regard puerperal convulsions as occurring under two forms, uræmic and hysterical. Albuminuria is regarded by them as conclusive evidence of some lesion of the kidney, that is, congestion from pressure, or the structural disease known as Bright's disease.

Now, that convulsions occur sometimes during the progress of Bright's disease, is an accepted fact in medicine. That puer-

peral convulsions are frequently associated with albuminuria, is also well known. But it seems to me that there are many reasons for doubting whether this association necessarily proves the relation of cause and effect. In the first place, there are many cases of puerperal convulsions, having all the characteristic phenomena which attend this fearful malady, in which there have been no symptoms indicative of any lesion of the kidney. The most careful examination has failed to detect either albumen or casts in the urine, either before or after the occurrence of the convulsions. In many cases, when death has resulted from the convulsions, only the most trivial lesion of the kidney, as slight congestion, has been found in the autopsic examination. Secondly, I am sure that many others, as well as myself, have often had cases of marked albuminuria during pregnancy, in which convulsions have not occurred. I will make the assertion still stronger, by saying that in the very considerable number of cases of albuminuria during pregnancy, that I have seen, convulsions have occurred in but few. Even M. Blot, one of the early and most zealous investigators in regard to this affection, met with but seven cases of puerperal convulsions in forty-one women who had albuminous urine. Some writers have met with a larger proportion than this, but I am not aware that any one has claimed that they occur in one-half of the cases of albuminuria. Thirdly, in many cases where the most careful and repeated examinations of the urine have failed to detect albumen, convulsions have occurred, and afterward the urine has been loaded with albumen. In the case we have before us, several examinations were made of the urine, and neither albumen nor casts were found; but after the convulsions occurred, the albumen was abundant. It seems to me, therefore, that there may be some reason for inquiring whether the same profound impression on the spinal system, which in the pregnant or parturient woman culminates in puerperal convulsions, may not also so modify the functions of the kidney as to result in albuminuria; or, in other words, instead of regarding the albuminuria as the cause of the convulsions, whether we have not some reason for believing that both the albuminuria and the convul-

sions are the effect of some common cause, the exact nature of which science has not yet determined.

Robin, in his recent work on the fluids of the body, has demonstrated that urinary albumen has not the same composition as the albumen of the blood, and that the albumen of Bright's disease differs essentially from the temporary albuminuria of pregnancy, which can easily be shown by special chemical reagents. The albumen of the urine in Bright's disease, when brought in contact with the oxide of copper in a solution of caustic potash, assumes a beautiful reddish violet color, and produces a more or less abundant flocculent black precipitate. Now, the urinary albumen of pregnancy, where Bright's disease does not exist, while it coagulates readily by heat and nitric acid, does not exhibit any such reaction from contact with the oxide of copper. So also Robin has demonstrated that the granular casts are not characteristic of any particular morbid state or pathological change of structure.

I am inclined to believe that, even if a large majority of the profession in this country do not accept the extreme views of Professor Braun of Vienna, namely: that puerperal convulsions are generally the result of Bright's disease in an acute form, which, under certain circumstances, spreading its toxæmic effects on the nutrition of the brain and whole nervous system, produces this fearful accident—they, at least, regard them as the result of some functional disturbance or lesion of the kidney, of a temporary character. I have long entertained doubts as to the soundness of these views. I have long been accustomed to warn medical students against the popular use of the term, Bright's disease, in connection with their puerperal patients, because the public have come to associate the term with an inevitable fatal termination, and the influence of the *morale* on this class of patients cannot be overestimated.

It is to be hoped that, in the advance of science, we may yet be able to clear up many of the obscurities which still overcloud this subject, and I think we can even now report progress. I have already alluded to the distinction which Robin has established between the temporary albuminuria of pregnancy and

that of Bright's disease. A work has recently appeared "On the Nerves of the Uterus," by Frankenhaeser, of Jena, based on the most careful dissections, and illustrated by most beautiful plates, in which is demonstrated a direct connection between the nerves of the uterus and the renal ganglia. This discovery may be the means of leading to an explanation of the true pathology of puerperal convulsions. Frankenhaeser reasons from his discoveries that the theory that the albumenuria of eclamptic patients is due to the pressure of the distended uterus upon the large abdominal vessels or the renal vessels, is highly improbable. He says that, to be sure, many circumstances seem to favor such a view; for example, the more frequent occurrence of eclampsia in twin pregnancies, in primiparæ with unyielding abdominal parietes, in persons of small stature, etc.; only the same causes could equally well serve to excite the renal nerves and those in connection with them. Besides, we observe frequently that women have no convulsions, who have suffered from albuminuria, both before and during pregnancy, the direct result of renal degeneration, in which, therefore, renal congestion really existed. It therefore remains questionable whether the access of albumen which is observed after puerperal convulsions, is the result of congestion or is due to the excitation of the uterine plexus. The sudden occurrence of the eclamptic attack upon all external sources of irritation (as pressure of the fœtal head upon the cervix, digital examinations, introduction of instruments, &c.) appears rather to speak for the nervous system, and not the vascular system, as the starting-point. He says that the changes observed in the kidneys of women dying from convulsions are too trivial, and too transitory, to indicate a long-continued congestion. Further, in confirmation, are to be counted the undeniable cases of convulsions where no albuminuria has existed. All these facts point to the importance of the connection between the uterine and the renal plexus.

Finally, gentlemen, you may ask me what do we really know about the causes of puerperal convulsions. I should answer that our knowledge amounts to about this:

First. We know that we have puerperal convulsions arising from uræmia, caused by Bright's disease of the kidneys.

Second. We know that we have convulsions associated with congestion of the kidneys and albuminuria, but it is not yet proven that the convulsions and the renal congestion bear the relation of cause and effect.

Third. We know that we have convulsions that arise from reflex irritation and congestion of the true spinal system, without evidence of any renal affection.

I will add a few words in relation to one point in the treatment of this case. You will remark that thirty-six hours elapsed from the time of the first convulsion until the child was delivered, and yet it was born alive and is doing well, a very unusual result when a child is born so long a time after the first attack of convulsions. As a general principle I think it safe to say, that the danger to mother and child bears a certain relation to the duration of the labor. In such a fearful complication of labor as puerperal convulsions, the feeling that the sooner the labor is completed, the sooner the danger to mother and child will be over, may sometimes prompt to injudicious measures to terminate the labor. Indeed, we were formerly taught that it was our duty, in all cases of convulsions, to deliver by any means in our power as speedily as possible. In this case the temptation was strong to apply the forceps, long before the child was born. I visited the patient several times for this purpose, but fortunately my reason instead of my feeling decided me to wait. The principle which should govern us in such cases is this: Whenever delivery by art can be effected with less irritation than would be produced by the continuance of the child in the paturient canal, it should be resorted to. I am convinced that I have formerly erred in some cases, from my great anxiety to see the labor terminated.

You will remark that the child had these convulsions after birth. Whether these were due to the transmission of some toxic element from the maternal to the foetal system, or to the perturbation and shock of the foetal nervous system from the convulsions of the mother, it is impossible to say.—*Medical Record.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A HISTORY OF THE INTELLECTUAL DEVELOPMENT OF EUROPE. Fifth Edition. By JOHN WILLIAM DRAPER, M. D., LL. D., Professor of Chemistry and Physiology in the University of New York, author of a "Treatise on Human Physiology," "Thoughts on American Civil Policy," Text Books on Chemistry and Natural Philosophy, etc. 8vo, cloth, \$5 New York: Harper & Brothers.

This is one of the most interesting, as well as remarkable, books that has ever been presented to the reading public, combining a condensed yet elaborated history of Europe, with deductions and thoughts on the general progress of civilization. The work is a lasting monument of Professor Draper's research and learning, and stamps him as a great and original thinker, a concise and close reasoner. He has undertaken a great task, but, in our judgment, he has wholly and worthily accomplished it.

The aim of his book is to show that the civilization of Europe has not proceeded in an arbitrary manner, or by chance, but that it has passed through a determinate succession of stages, and has been developed according to natural law.

The author's mode of treating the subject is altogether from a scientific point of view, and hence he is led to the consideration of many of those questions that have attracted public attention of late years so strongly. In this respect, the work presents very great novelty; yet it is composed in so popular a style as to render it suitable not only for persons who delight in philosophical reading, but likewise for students of history everywhere.

In the United States at the present moment its publication can not but be acceptable. Though written before our present troubles began, it is full of principles and suggestions that every thoughtful reader will connect with the great events now transpiring. It also, from the history of the past, in no indistinct manner, foreshadows our future.

Scientific opinions are steadily exercising an ever-increasing power in modern civilization. They are beginning to modify political institutions. The work of Dr. Draper is the first attempt that has been made to describe their rise and progress, and how it is that in recent times they have acquired such a

wonderful influence. A growing want of some authentic exposition of them has long been felt among intelligent readers. That want is here supplied, with the advantage that ideas too generally serving only to provoke contention are presented in a temperate manner, and discussed with a candor that can not fail to command respect.

We append the following extract from a foreign review :

"It is one of the not least remarkable achievements in the progress of the positive philosophy that have yet been made in the English tongue. A noble and even magnificent attempt to frame an induction from all the recorded phenomena of European, Asiatic and North African history. The strongly human sympathy and solicitude pervading this book is one of its most entrancing charms. Unaccustomed though a reader might be to scientific habits and thought, or uninterested in the gradual elaboration of eternal rules and principles, here he can at least disport himself amid noble galleries of historical paintings, and thrill again at the vision of the touching epochs that go to form the drama of the mighty European past. This is no dry enumeration of names and dates, no mere catalogue of isolated events and detached pieces of heartless mechanism. Rather does this work come to us as a mystic harmony, blending into one the treasured records of unnumbered historical biographies, the accumulated stores of sciences the most opposed, and erudition the most incongruous, now descending into slow and solemn depths of tone, as sin, cruelty, intolerance, form the theme, now again lost in unapproachable raptures of sound, as true greatness, endurance, self-control, are reflected in the grand turning-points of European story.

"The book of Dr. Draper is eminently encyclopedic. It ransacks every accredited science, all the most recent discoveries, and every independent source of historical information.

"What Compté showed might and ought to be done for the whole world of man, what Mr. Buckle commenced for England, Scotland, France, and Spain, Dr. Draper has effected for the whole of Europe. The gigantic vastness of the task is almost

paralysing, contained as is the result in a very moderate space, but it is done none the less carefully and thoroughly.

"All the latest researches in history, all the most recent discoveries in the realms of geology, mechanical science, natural science, and language, every minute particular that can explain or illustrate the general progress of all the European races from the most primitive ages, are accurately and copiously detailed in their several relations. Nor is the author without such an art of representation as can render a book not only such as we ought to read, but also such as we like to read."

The book should be in the possession of every thinking and reflecting man. To the professional man, either medical or legal, it is valuable; and the statesman especially will receive much useful knowledge to guide him in his high and responsible duties.

FIRST OUTLINES OF A DICTIONARY OF THE SOLUBILITIES OF CHEMICAL SUBSTANCES. By FRANK H. STOREN. Cambridge, Mass. Sever & Francis, publishers. (For sale by E. P. Gray, bookseller.)

Few works on modern science give evidence of more laborious and patient research than the one under consideration; and its value can hardly be appreciated except by the chemist and pharmacutists. The author very truly says, in his preface, "The utility of a complete dictionary of the solubilities of chemical substances, or in fact of any of the physical constants of chemistry, needs no explanation. I have been long impressed with the great practical importance of a wider dissemination of our knowledge of the solubilities of salts, and feel convinced that chemical science itself will gain many advantages if all known facts respecting solubilities were gathered from the widely scattered original sources into one comprehensive work, and thus presented in an easily accessible form. The importance of such a work was the more clearly impressed upon me, since I had learned, by previous experience, too many difficulties and delays attend the correct determination of solubilities, and had observed how little attention is usually paid to the labors of earlier experimenters, either as regards avoiding or refuting their errors, or bearing witness to the accuracy of their results."

The work is arranged alphabetically, making it of easy and ready reference; in fact, in every respect it is complete and comprehensive. To the chemists and chemical student it is invaluable, while to the pharmacutists and dispensing druggists, and even the physician, it is valuable to refer to any doubtful or uncertain question of solubilities when compounding or writing a prescription. No library is complete without it, and like the Medical Dictionary, will be called constantly in use when its value is once known. We most earnestly endorse and recommend the work. We return our thanks to the publishers for the copy so kindly sent us.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. DESIGNED FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE. By **AUSTIN FLINT, M. D.,** Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, etc., etc. Third edition. Thoroughly revised. Philadelphia: **HENRY C. LEA.** 1898. For sale by Fryar, Cowan & Krath, successors to Keith & Wood.

No better evidence of the value of this work can be adduced, than that in less than two years a new edition is called for. As a teacher and lecturer, Prof. Flint has long stood at the head of his profession, and his work recognized as standard authority, having been adopted as the text book on the practice of medicine by most of the medical colleges of the country. The present edition has been much enlarged to meet the progress of medical science. The author says: "Since the publication of the second edition of this treatise, much time has been devoted to its revision. Recognizing in the favor with which it has been received, a proportionate obligation to strive constantly to increase its worthiness, the author has introduced in the present edition additions, derived from his clinical studies and from the latest contributions in medical literature, which, it is believed, will enhance considerably the practical utility of the work."

The work embraces all those subjects which generally enter into the teaching of the chair of the principles and practice of medicine in our medical colleges, and as a text book for the student is especially valuable, while to the American practitioner it is a safe and reliable guide in the treatment of disease. The work is published in Mr. Lea's usual elegant style, in one large volume of over one thousand pages.

THE MEDICAL FORMULARY, being a collection of prescriptions derived from the writings and practice of many of the most eminent physicians in America and Europe, together with observations on Dietetic Preparations, Antidotes for Poisons, Endermic use of Medicine, the use of Ether and Chloroform and Pharmaceutical and Medical Observations. By BENJAMIN ELLIS, M. D. Twelfth edition revised and improved with additions, by ALBERT H. SMITH, M. D. Philadelphia: Henry C. Lea. 1888. (For sale by Frary, Cowan & Krath, booksellers.)

We are much pleased to announce a new edition of this most useful work, one that in the earlier years of our medical life was of inestimable value. No task is more difficult to the young physician than to become thoroughly familiar with the proper manner of assigning and classifying his remedies. This is done in a practical manner in the work before us, not that the physician should become a mere copyist in his prescriptions, but learn to adopt the most elegant and useful plan in compounding them. In revising the present edition of the *Formulary*, the editor says: "The progress of medical science in the departments of *Materia Medica* and *Therapeutica* has rendered necessary the addition of a considerable amount of new matter; also the table of doses has been carefully corrected." In addition to the new *Formula*, the editor has added to the work the new classes of *Antemetics* and *Disinfectants*; besides references to inhalation of atomized fluids, the use of the nasal douche, suggestions upon the method of hypodermic injection, the administration of anæsthetics, and other valuable matters of general use to the practitioner. A new feature of the *Formulary* will also be found in a full index of diseases, with reference to the numbers and principal ingredients of the particular formula applicable to each. Altogether, we look upon the work as a most valuable addition to the physician's library.

THE TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION. Volume nineteen. 1888.

This is a volume of about five hundred pages, and contains, besides the proceedings of the Association, a number of valuable papers and reports of the various sections. The proceedings we published shortly after the meeting, in the *REPORTER*.

The Report on the Conveyance of Cholera, by Dr. John C. Peters, of New York, is especially interesting; also the Reports on the Climatological and Sanitary Condition of the various States, by Dr. W. F. Thomas; on Treatment of Club-foot without

Tent. my, by Dr. L. A. Sayre; on Ophthalmology, by Dr. J. S. Hildreth; on the Treatment of Syphilis by Hypodermic Injection, by Dr. L. Elsbery, and on A Safe and Effectual Operation for the Radical Cure of Varicocele, by Prof. Paul F. Eve.

The volume is a valuable addition to American Medical Literature. The Committee on Publication deserve great credit for the very elegant manner in which the work is published.

GOFF'S COMBINED DAY-BOOK, LEDGER, and DAILY REGISTER OF PATIENTS. Philadelphia: Lindsay & Blakeston. Price \$12 00, sent post-paid on receipt of the money.

This is one of the most convenient and complete account book for the medical practitioner that we have ever seen, not only for the perfect manner in which the accounts are arranged, but the ready means of reference to each person's bill, with all the items concisely set forth and recognized at a glance. Among the advantages of this book are—

The account of a *whole* family for an *entire* year can be kept in a very small space.

No transfer of accounts from one book to another, or from one part of the book to another.

No protracted search for an account when wanted.

Shows the exact state of an account at any moment.

The "Remarks" column will be found useful for noting any special or remarkable circumstance which may occur during medical treatment. The physician will save the price of this book many times over, merely from its simplicity.

This book contains, in addition to the simplified form of accounts—

A form, "Summary of Practice," for the compilation of facts as often as the physician chooses.

A copious index, giving the name, residence, and occupation of the patient, as well as the page of the book on which the account is to be found.

A full and complete set of "signs" accompany each book.

We unhesitatingly recommend this book to our professional friends, feeling assured all will be pleased with it.

ATLAS OF VENEREAL DISEASES. By A. CULLERIER. Translated from the French, with notes by FREEMAN J. BUMSTEAD, M.D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. Part V, with cover for binding. Philadelphia: Henry C. Lea. 1868.

The present number completes this most excellent work. We have spoken heretofore of the merits of this work, and can only repeat our unconditional endorsement of it as one of the most complete and elaborate treatises on venereal diseases ever published. The plates in the present number are, if anything, more elegant than in previous numbers. A cover accompanies the last number, that they may all be bound in one volume. No physician who pays any attention to this class of diseases can afford to be without this book. Taken in connection with Prof. Bumstead's previous work on the same subject, they would comprise all that is known on this important subject. The publisher deserves great credit for the style of the work, it being by far the most elegant medical publication ever issued from the American press. The price of the number is \$3 00 each, or \$15 00 for the volume complete.

MEDICAL REPORTER.

ST. LOUIS, DEC. 1, 1868.

Statistics of Inebriation.—Dr. McKinley, of this city, furnishes the following table of Statistics on Inebriation in the United States, which have been compiled by him after much careful research, and contain some very interesting yet startling facts. He says:

Taking the population of this country at forty millions, we find that of 300 men, 122 never drink ardent spirits at all, 100 drink moderately, but not to intoxication, 50 are ephemeral drinkers, 25 drink periodically, called "spreeing," and 3 are habitual inebriates. To every 178 who drink, 3 are confirmed inebriates, 25 are periodical drinkers, 50 are ephemeral drinkers, and 100 are moderate drinkers. Total, 178; non-drinkers, 122.

Grand total, 300. One confirmed inebriate to every $59\frac{1}{2}$ of men. Of 700 women, 600 never taste alcoholics of any kind, 30 taste wine occasionally, 17 taste ardent spirits occasionally, 36 drink beer or ale constantly, 14 drink ardent spirits periodically, and 3 are habitual inebriates. To every 100 who drink, 3 are confirmed inebriates, 14 drink ardent spirits periodically, 36 drink beer or ale constantly, 17 taste ardent spirits, and 30 taste wine occasionally. Total, 100; non-drinkers, 600. Grand total, 700. Total of both sexes enumerated—drinkers and non-drinkers—1,000; total of both sexes who drink (out of 1,000), 278. Pre-dominance in *confirmed inebriates* of the sexes: 3 men in every 178; 3 women in every 100; 1 confirmed inebriate to every $33\frac{1}{2}$ of women.

Fewer women drink than men; but a larger proportion of them become habitual drinkers.

The following deductions are made from the above statistical basis, and relate to the aggregate population of adult males and females, *using* and *not using* alcoholic drinks: In 1,000 men there are 10 confirmed inebriates; in 1,000 men, there are $593\frac{1}{2}$ drinkers of all kinds, who drink to some extent or other.

Of women—1 in every 7 use alcoholics in some form; in 1,000 women, there are 142 $\frac{6}{7}$ who drink to some extent; in 1,000 women, 4 $\frac{2}{7}$ are confirmed inebriates.

Debauch or ephemeral drinkers, rarely become habitual, but periodical drinkers; the latter rarely become habitual inebriates, as the violence of their drinking is too great and leads to disgusting satiety, and hence to intervals of sobriety. The moderate drinkers form the class from which the habitual inebriates are chiefly derived; prolonged moderate drinking cultivates the diathesis. The foregoing statistics are drawn from the segregational population, including small and large towns, but excluding the gregarious population of cities, where the ratio of drinkers is higher.

The Missouri Dental Journal, published in St. Louis, Mo. The first number of this new Journal has been issued, dated January, 1869. It is to be published monthly, and contain 40 pages. It is to be devoted to the specialty of Dentistry. Homer Judd, M. D., D. D. S., editor, H. S. Chase, M. D., D. D. S., and W. H. Eames, D. D. S., associate editors. Terms, \$3 00 per annum. We are glad to welcome this new journal. From a long personal acquaintance with the editors, all gentlemen of ability and well posted in their branch of the profession, we feel assured that its pages will be filled with valuable matter to the dentist, and we trust that they will receive ample encouragement. Surely no Western dentist can afford to do without it, and the dental profession owe it to themselves to sustain the editors in their undertaking, with both subscriptions and contributions. The *Journal* will be the especial organ of the Missouri State Dental Association. We most earnestly commend the work, and offer our fraternal welcome to the editors.

The Medical Bulletin, a journal of medicine and surgery, published in Baltimore, Md. Edited by Edward Warren, M. D. Issued on the 1st and 15th of each month. Terms, \$2 00 per annum. This is a new candidate for public favor, an eight page, three column paper, devoted to medical and colateral sciences. Surely Baltimore can sustain one medical journal. They have one of the best and most elegant dental journals published in the United States, and we would have thought the medical profession could have sustained as good a medical work; but the present is a good commencement, and from the contents of the first number, bids fair to be a valuable addition to our current medical literature. We gladly place the *Bulletin* on our exchange list.

THE
St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

OSCAR F. POTTER, M. D.

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ON THE DYNAMICS, PRINCIPLES AND PHILOSOPHY OF
ORGANIC LIFE. AN EFFORT TO OBTAIN DEFINITE CONCEPTIONS OF HOW DO MEDICINES PRODUCE THEIR EFFECTS,

[Valedictory Address, delivered to the Muskingum County Medical Society, at its annual meeting, held in the city of Zanesville, Ohio, May 6th, 1868.]

By Z. C. McELROY, M. D., President, of Zanesville, Ohio.

INTRODUCTION.

The origin of this essay was the hypodermic syringe. The effects following the introduction of a solution of morphia beneath the cuticle arrested my attention, on account of their resemblance to modern electro-magnetic telegraphy. Some years previous, Prof. Draper's Physiology had convinced me that therapeutics would some day become an exact science. About the time the hypodermic syringe was first used by me (in 1863), the idea was conceived of working out the problem of "How do Medicines Produce their Effects." The year following, the essays of Grove, Mayer, Helmboltz, Joule, &c., on the continuity of force, were attentively studied, and the purpose of the year previous was greatly strengthened; but no progress was made until some lectures, by H. Bence Jones, published in Braithwaite, met my eye. This, with the empirical facts of Bennett's clinical lectures, as well as Chambers' work on digestion and its derangements, and his subsequent work on the renewal of life, gave a definite course to my investigation. Perhaps other circumstances, not now recollected, aided me; but nothing impressed me so vividly as the results of hypodermic injection.

The most difficult part of it was the hystogeny and hystolysis of the tissues. That overcome, by its analogy to crystallization in the inorganic world, the remainder was as clear to me as sunlight. When the essay was completed, the impression that I had made a valuable generalization continually deepened.

After its delivery, one of the members of the Medical Society, every way competent to criticise it, said that he had no doubt of the truth of the principles of the essay, as they were not new to him, but were so far in advance of the age that it was barely possible the grandchildren of the present race of practitioners might be guided by them in practice. That it would be necessary to create a new medical literature, reinterpreting the empirical facts of disease and therapeutics, and that that would consume at least half a century. I am conscious that I have gained one-half or three-fourths of that time already; for I am entirely guided by them now in practice, and with an amount of satisfaction and certainty to which I was before an entire stranger. Anxious to obtain further criticism, brief synopses of the essay were made and sent to various distinguished practitioners and teachers. An incident, not needful to detail, brought it before one of the most distinguished authors and teachers of the country, who advised its early publication; and, I may say that each day's experience and professional reading serves to confirm my own convictions of the value and importance of its philosophy and generalizations.

The following quotations are introduced as prefatory to the inquiries which I propose to make on the subject:

"Since it is given to us to know our own existence, and be conscious of our own individuality, we may rest assured that we have what in reality is a far less wonderful power—the capacity of comprehending all the conditions of our life. God has framed our understanding to grasp all these things. For my own part, I have no sympathy with those who say of this or that physiological problem, it is above our reason. My faith in the power of the intellect of man is profound. Far from supposing that there are many things in the structure and functions of the body which we can never comprehend, I believe there is nothing in it we shall not at last explain. Then, and not till then, will man be a perfect monument of the wisdom and power of his Maker, a created being, knowing his own existence, and

capable of explaining it. In the application of exact science to physiology, I look for the rise of that great and noble practice of medicine, which, in a future age, will rival in precision the mechanical engineering of my own time. Even now this method is attended with results which must commend it to every thoughtful mind, since it is connecting itself with these great truths which concern the human family most closely, and is bringing into the region of physical demonstration the existence and immortality of the soul of man, and furnishing conspicuous illustrations of the attributes of God."—*Draper's Physiology*, pp. 25-6.

"I am very sensible of the great honor you have done me in electing me the first President of the Clinical Society. Reluctant, as I not unnaturally am, to assume, at my time of life, any fresh duties or obligations, I yet must confess that I have extreme satisfaction and pleasure in accepting at your hands this new office; for the society which we are founding to-night seems to me well calculated gradually to bring about that which, in my judgment, is the thing most needful, at present, among us. I mean more exactness of knowledge, and, therefore, more direct and intelligent purpose, and more successful aim, in what is really the end and object of all our labors—the application of remedies for the cure or relief of diseases. *Certainly the greatest gap in the science of medicine is to be found in its final and supreme stage—the stage of therapeutics.* Its material pathology, also, under the auspices of a sister society, has been, I will not say completely, yet very amply and fruitfully ransacked by the diligent scrutiny and study of the dismal, but instructive, revelations of the dead house. *I say its material pathology*, for the condition of doctrinal pathology must necessarily partake of whatever imperfection may be found in the correlative science of physiology. Again, we have attained to a great degree of certainty in the detection of disease in the living body. We know tolerably well *what* it is we have to deal with; but we do not know so well, *nor anything like so well, how* to deal with it. This is more true, no doubt, in the province of the physician, than in that of the surgeon; but it is lamentably true in both provinces. We want to learn distinctly what is the action of drugs, and other outward influences, upon the bodily organs and functions—for every one now-a-days, I suppose, acknowledges that it is only by controlling or directing the natural forces of the body, that we can reasonably hope to govern or guide its diseased conditions. To me it has been a life-long wonder how vaguely, how ignorantly, how rashly, drugs are often prescribed. We try this, and not succeeding, we try that; and, baffled again, we try something else; and it is fortunate if we do no harm in these our tryings. Of this the evidence is plentiful and constant. * * * * Still, of therapeutics as a trust-

worthy science, it is certain we have as yet only the expectation. The influence of drugs upon bodily conditions of health and disease is most real and most precious to us. And some of them, in our contests with disease, we have learned to wield with much confidence and success. No one questions the marvelous power of quinine to stop malarious fevers and other periodical complaints. Who can doubt the efficacy of opium or anæsthetic vapors in blunting the sensibilities of the body, and so quelling pain? Or of the iodide of potassium to eliminate from the body, apparently by first dissolving them, certain poisonous elements? The rough, yet sanative, effects of emetic and purgative drugs are notorious to all. But there is a host of other known or reputed remedial substances—to say nothing of a further host, no doubt, hitherto unthought of and unassayed, about which our practical knowledge is very imperfect, or even misleading * * * —peradventure, to the discovery even of the laws—by which our practice should be guided, and so bring up the therapeutic and crowning department of medicine to a nearer level with those parts which are strictly ministerial and subservient to this.”—*Sir Thomas Watson. London Lancet, Am. Ed., April, 1868.*

“The true principles, therefore, which should guide our efforts to advance therapeutics are—

“1st. That an empirical treatment, derived from blind authority, and an expectant treatment in an equally blind faith in nature, are both wrong.

“2d. That a knowledge of physiology and pathology is the real foundation and necessary introduction to a correct study of therapeutics.

“3d. That a true experience can only have for its proper aim the determination of how far the laws evolved during the advance of these sciences (physiology, pathology and therapeutics) can be made available for the cure of diseases.

* * * “I have only to express my conviction that our uncertainties as to the future existence of a scientific medicine can only be removed by working out; in all its details, the molecular theory of organization. The histogenic and histolytic transformations of the tissues, the various metamorphoses they undergo in the exercise of the nutritive and nervous functions, as well as the correlation and conservation of the dynamical, chemical and vital forces of the economy, are the points now being determined by the physiologist. We are still waiting for the solution, by the organic chemist, of several inquiries necessary for our onward progress. But these accomplished, as it is hoped they soon will be, it must be recognized that all action and all function must be essentially dependant on the formation and existence of the molecular constituents of the frame. Then it will be seen, also, that the agents which operate on it, either

from without or within, must be so capable of being prepared as to act upon these minute particles, and it will be made apparent that one law will blend into a harmonious whole the kindred sciences of physiology, pathology and therapeutics."—*John Hughes Bennett, 1864, in London Lancet, Am. Ed., March.*

HOW DO MEDICINES PRODUCE THEIR EFFECTS?

The *modus operandi* of medicines, or how do they produce their effects, are inquiries which have been awaiting solution for many centuries. A great many answers have been given, some of them true as far as they go, but none that have satisfied or commanded the assent of the medico-philosophical world at any time. Standard authors tell us that some are absorbed into the circulation, some act chemically, some mechanically, some by sympathy, in each case having some sort of elective affinity among the organs and textures, and at these elected places producing their effects. After studying the best resumes of what has been written on the subject, the inquiry still presses on the unsatisfied mind, "How do they operate?"

The mass of facts in regard to their visible effects have been accumulating from a period ante-dating our present chronology; but they have been simply empirical facts and observations, without a philosophical solution of their relations to the living organism. Classifications of therapeutic agents have long existed, some of them minute and elaborate, but all based on those parts of the system at which their effects become visible and tangible to our senses. Thus: if an article produces alvine discharges, it is classed as a cathartic; if vomiting, an emetic, &c., &c. Some of them have to be placed in two or more classes, because different degrees of effects are visible, according to the dose and mode of administration, at one or more organs, or on one or more tissues.

This method of classification is purely physical, and based, for the most part, on an increase or diminution of some natural or unnatural discharge from the body. The idea of a cathartic is indelibly associated in the mind, by education, with the somino or water-closet. So an emetic, with the throes of vomiting, and the ill-looking stuff ejected from the stomach. Again, some are

classed as stimulants, and the physical idea associated with their action is, "quick diffusion and transient increase of vital energy in the heart and arteries, and brain and nerves." In the progress of this investigation an attempt will be made to show that, with this nomenclature, classification, and their mental associations, it is impossible to get at their *modus operandi*. In fact, the first step toward getting a solution to the inquiry, at all in agreement with the processes of life, is to banish from the mind the existing classifications of the *materia medica*, based on their visible effects; but not of their effects, for these are all important; so that the mind may be free to arrange and classify as the organic processes of life may suggest. It would not be possible, at present, to make a classification of the effects of medicines, in agreement with the organic processes of life, without the mass of empirical facts in therapeutics now existing in our literature. What is wanting is not new facts and observations, but a philosophical grouping or classification of those already in existence, and a reinterpretation of them, and the future study of therapeutics in accordance with their influence on the organic processes of life. This does not, as it appears to the writer, exist in our medical literature now. Having arrived at a satisfactory classification, to my own mind, and finding that in my hands it combines greater simplicity, uniformity and certainty in the art of prescribing medicines than that it displaces, it is my present purpose to submit it to the society for criticism, adoption or rejection, as the proofs submitted may influence judgments for or against it.

The practical application of the science and art of medicine has not kept pace with the development of its collateral branches of chemistry, physiology, histology and anatomy. The most striking changes are due to the greater reliance on hygienic and dietetic measures, and less on medicines, in the treatment of disease. The number of medicines in daily use by the most successful practitioners, has undergone a striking diminution. Prof. Gross, in a recently published paper, states, that out of the many hundred different articles required to be kept in well appointed drug stores, not above thirty-five to fifty are in common and

daily use by physicians of the largest practice. These are significant facts, and believed to point to that great event to which the general medical mind is tending, viz: the reduction to order and symmetry of the vast accumulation of therapeutical facts in medical literature.

Existing classifications tend to associate in the medical mind certain more obvious symptoms, or a disease by name, with certain remedial agencies. Thus, a late and valuable work on *materia medica* and therapeutics, gives an index of diseases by name, and their remedies. With such clogs as this, is it any wonder that practical medicine lags behind its collateral branches in development? The first step toward a scientific and philosophic and, perhaps, natural grouping of therapeutic agents, as they affect the organic processes of life, is to agree upon, and adopt, some common yet definite idea of these processes—what are they, and in what do they consist? Every organized being presents to us one prominent fact—that it must have food—the materials out of which its body is to be formed and sustained. This embodies the idea of nutrition. It is a fact that the living body is daily and momentarily building up and breaking down. Human beings, under our civilization, as a rule, eat three, more or less, hearty meals of organized food every day in health; more food being required by those who perform hard bodily, or close mental labor, than those who spend their time in idleness, or without work of any kind. What becomes of it? Some of it is certainly assimilated to the body; another part, possibly broken down in organization, to furnish dynamics for a higher organization of the remainder; while the various tissues and textures are as certainly and constantly, asleep or awake, undergoing the same process of reduction in organization, some portions being passed out of the body in a low organic state, while other portions find exit in the ordinary forms of inorganic matter, as carbonic acid and water. This process of reduction of organic tissues is known as oxidation; because the free oxygen taken in at the lungs plays a conspicuous part in breaking down the complex organization of tissues.

We have, then, as the two leading processes of organic life

nutrition and oxidation ; and as the continuance of life in every individual case depends upon their integrity and natural relations to each other, it is with reference to how medicines influence them, that therapeutic facts are to be grouped and classified, and from studying these, that we can arrive at a correct solution to the inquiry, "How do medicines produce their effects?"

Having thus settled on substantial bases the facts of nutrition and oxidation, the next step is to fix upon some definite conception of disease, not by name, but by the facts, as they pass under our observation.

Prof. Gross, in the recently published paper already referred to, gives the following definition of disease :

"Disease is not, as it was formerly imagined to be, a special entity, a particular essence, a something vague, intangible, mysterious, but simply a departure from the normal standard ; a change in, or of, a part, brought about by a perverted action of its circulation, innervation and nutrition, and modified by structure and function. Nearly every disease, whatever its name or site, is essentially an inflammation. Even in what are called the neurosis, or nervous affections, inflammation generally plays a conspicuous part."

He then goes on to say : "These two propositions—i. e., that disease is a modification of nutrition, and influenced by structure and function—thus briefly stated, comprise the germs of"—in the printed copy from which this quotation is taken, the word *revelation* is used, but it is perhaps a typographical error for *revolution*—it will then read : "These two propositions, thus briefly stated, comprise the germs of a revolution which has swept away the whole system of nosology (entity of disease), and has done more than all that preceded it in laying its foundations (practical medicine) broad and deep as a grand science, to be viewed and studied as an object of natural history, in the same manner and upon the same principles precisely as an animal, a plant, or a mineral is viewed and studied, apart from all hypothesis and speculation, as something tangible and existent, not vague and undefined, without form or substance."

Still further it is stated: "The fact that nature is often capable of curing disease, is now universally admitted. This is not, as has been stated, new; but for the diffusion of a more general knowledge of it, the world is mainly indebted to two men, Sir John Forbes, of London, and Jacob Bigelow, of Boston. That every case of disease, whatever its origin, location, or symptoms or complications, should be treated on its own merits, or according to the peculiar features by which it is characterized, must be evident at first sight; but, unfortunately, this principle is seldom recognized at the bedside, and the consequences, as may well be imagined, are most pernicious. The universal employment of this or that treatment, in consonance with the fashion of the day, can not be too pointedly condemned."

In the spirit indicated by Prof. Gross, it is proposed in this paper to investigate the *modus operandi* of medicine, as any other object of natural history or philosophy is studied, and not as something vague, mysterious, intangible, and not understandable, but as something that has an existence, and can be studied and understood.

As an example of the other way of studying the *modus operandi* of medicines, take the following extract from the foreign correspondence of a leading medical journal of Philadelphia, purporting to have been written in Paris, France, in the year 1867, and if so, possibly by an American physician or medical student, temporarily in that city. The letter is dated 10th November, 1867, and gives an account of the treatment of acute rheumatism by the sulphate of quinia in the Paris hospitals, with the following explanation of its *modus operandi*:

"The theory of the action of the sulphate of quinia is based on its influence on the nervous system. It is supposed to shock the nerves, as in intermittent fever, and, by stimulating them, arrest the process of disassimilation, which proceeds, perhaps, with such rapidity because the usual influx of nervous force has been withdrawn."

Making every possible allowance for clerical and typographical errors in this expose of medical dynamics, it is, in any

event, simply nonsense. It may well awaken amazement that such a statement of the *modus operandi* of any medicine should be written in Paris, in the full blaze of medical light believed to shine therein in the year 1867, by an American physician or medical student! It may be an extreme case, and an extreme blunder, but it serves to show the necessity for more and better philosophy in regard to the mode of operation of medicines, if only for the sake of simplicity and certainty in their administration.

The idea of the classification of medicines to be submitted in this paper, and it was but an idea, was probably suggested by some lectures by H. Benace Jones, published in Braithwaite, and Chambers' works on Digestion and its Derangement, and Renewal of Life; and, possibly, by Bennett's Clinical Lectures. Other sources it is difficult to specify. But the mode of operation was suggested by observing the effects of morphia by the hypodermic syringe. These ideas were elaborated in the writer's mind to present proportions, guided by the modern philosophy of the continuity of matter and force. The known facts of anatomy, physiology, chemistry, histology and therapeutics, are made use of as the substantial basis for certain inductions.

Medicines, then, as they influence the leading organic process of life, are classified as follows :

PROMOTERS AND RETARDERS

of	of
Nutrition	Oxidation
or	or
Constructive Metamorphosis.	Destructive Metamorphosis.

This tabulation combines scientific exactness of classification, and, as in chemistry, the classification of itself explaining how each therapeutic agent or measure produces its effects.

These are the two great classes, each subdivided into two other classes. The organic processes of nutrition and oxidation have, no doubt, modifications in regard to time, and the character of the organic matter undergoing the process of assimila-

tion or oxidation ; or, in other words, constructive or destructive metamorphosis. The nutrition, for example, of the medalla oblongata would be, very probably, different from that of the gastrocnemii muscles ; and, if true in this instance, would be true, also, with reference to other and dissimilar tissues. They each have their mode, or rate, and time, of nutrition and oxidation ; and must, also, be differently influenced by different agents of the materia medica, or by the same agents. As a refinement, the class of promoters of assimilation may be subdivided just so many times as there are widely different textures to be influenced ; but, for practical purposes, this need not be very minute. So, also, the retarders of assimilation may be subdivided in the same way. The promoters and retarders of oxidation, or destructive metamorphosis, may be, in like manner, sub-divided. The great fact to be constantly borne in mind is, however, that the effects of all the four leading classes, or any subdivisions that may be made, are universal over the system, in some parts more than others, but all parts sooner or later brought under their influence. There are no therapeutical agents having only local effects.

In studying the human body, anatomically, physiologically and philosophically, it is found that amidst its complex organizations, functions, and ends accomplished, there is nothing left to chance, but that material instrumentalities are found, through and by which each dynamic result is attained. The reign of law is supreme among its organs, structures and functions. Though momentarily dissolving and reconstructing, the types, in health, are ever preserved. The dynamics of the human body are under the control of this force of individuality, or the strictly vital force, as contra-distinguished from the organizing force. The organizing force reproduces the material organization ; the vital produces the types or forms.

Modern scientific investigation has established the identity of many of the chemico-vital phenomena of the living body, with the ordinary chemical phenomena of physical science out of it. Thus, organic chemistry, says the London *Chemical News*, has constructed a large number of organic compounds from carbonic

acid, water and ammonia, and some from the elements themselves. The oils and fats have been formed—sugar almost within reach—but the albuminous still away beyond its present achievements. Of the descending compounds, identical with these, the results of the retrograde metamorphosis of the human tissues, almost all can be reproduced at will, out of the body. These facts make it possible to arrive at a proximate and understandable solution to the question, "How do medicines produce their effects?" even though failing to demonstrate some conclusions partly arrived at by analogy. The correlation, or mutual conversion of the physical and vital forces, is accepted by the scientific world, though the demonstrations are less clear than the conversion of the physical forces alone.

The evidence, however, that medicines can produce no other effects than modifications of the organic processes of life, is clear and conclusive to my own mind, though a failure might be made in endeavoring to satisfy others in the same way and to the same extent as myself. But as the reign of law is supreme, and we can have no perceptions of any force, only as the effect of some pre-existing force, it follows that the dynamics of life are all dependent on the oxidation of organic matter or tissues. The forces manifested by therapeutic agents can be evolved only as they modify the processes of constructive or destructive metamorphosis, or the organic processes of life, nutrition and oxidation.

In grouping the component parts of a human body for the purposes of study, as any other object of natural history, one of the most striking features is its dual life; one, that of conservation, or nutrition—involuntary; the other, that of relaxation to other objects—voluntary. The action of the stomach and bowels, heart, lungs, and the motor power of each, are either imperfectly, or not at all, under the control of volition or the will. Sight, hearing, moving from place to place, &c., are voluntary, or under the control of volition.

Another remarkable feature is, that the life of relations is intermittent, cannot be maintained in a state of activity more than two-thirds or three-fourths of the time; the remaining part is

passed in what is known as sleep, a state of more or less complete suspension. It is during this suspension or sleep, that the capacity or power of sustaining the period of activity is accumulated. On the contrary, the life of conservation has remissions only, never wholly suspended. Again, the component parts of the human body may be grouped, for purposes of dynamic study, into the producers, transmitters and consumers of dynamic force. In the first group, or producers of force, are included the large and two smaller brains, their continuation as the spinal chord, and various masses of similar tissue, called ganglions and plexuses. In all of these we find two dissimilar tissues, the gray and white, conditions corresponding to, and requisite for, the evolution of dynamic force in ordinary physics. The evolution of force is coincident with oxidation of these dissimilar tissues, whether in the brain, chord, ganglionic or plexual masses. The transmitters, or carriers, of dynamic force, are chords of complex character, containing within the same sheath separate fibres for the transmission of dynamic force for several distinct ends, as motion and sensation, going out from the central masses, and from the exterior back to the interior. The consumers of dynamic force are the muscles, organs, and nerve masses themselves, for they, too, must be constantly renewed, probably most largely during sleep.

To these elements, grouped in the several ways stated, must be added the blood—the fluid stream—into which are poured alike the organic materials for the conservation of the body, and the debris of the momentarily dissolving tissues of which it is composed. From this stream the several organs take the materials with which to perform their allotted offices of conservation, mixed conservation and elimination, or elimination alone. All of the organic instruments of the body may be grouped into these three classes, though they perform but the two offices of assimilation and elimination. Some of them, only one, as the stomach and bowels, or, perhaps, more properly, the whole alimentary track—assimilation only—though the lower bowel is the receptacle of effete matter in part, awaiting convenience in ejecting it. Others, as the kidneys, elimination only; while

others, again, perform parts of both acts, as the liver and lungs. That is the human body as grouped for present study—wonderfully complex in detail, and as equally wonderfully simple when viewed in its two great aspects of nutrition and oxidation; for, however apparently diverse its component parts, they naturally arrange themselves in one or the other classes of assimilants and oxidants. The present object is to obtain a solution to the inquiry, “How do medicines produce their effects?”

It has been shown that for every dynamic end in the human body, material instrumentalities are found; therefore, among these instrumentalities must be sought the solution to our present inquiry. A necessary step to further progress in this investigation is, the formation of some more or less definite conception of organic nutrition and oxidation. Here resort must be made to analogy, not always a safe way of reasoning, but, in the present instance, not likely to lead far astray. It may be accepted as established truth, that these transformations of the food consumed by human beings, into the types and forms of their various organs and tissues, as well as their retrocession to lower states of organization, is among the molecules or atomic particles of matter; that it is, also, through the medium of cells, or minute organisms, formed in and nourished by the blood itself, that the solid tissues and textures of the body are formed; that these cells become the various solids of the body, in the smaller ramifications of the blood vessels; that these solids, in their turn, are oxidized, and passed out of the body, either as organic matter, as carbonic acid and water, or organic matter, of lower organization, and not organizable again, except by vegetable organisms; for living, organized beings can only be nourished by organic matter, organized from inorganic elements, by vegetable organization. The first acts of the digestive or assimilative process is reduction of all food to a uniform solution. The simplest idea of animal growth or nutrition, is that of crystallization. In the inorganic world, each substance capable of liquefaction by solvents or heat, has its own definite crystalline forms, which are always assumed when passing from the liquid to the solid state, unless interfered

with by extraneous circumstances, as variations of temperature, presence of heterogeneous matter, &c.; and here is a key which will unlock some of the secrets needful to be revealed in answering the present inquiry, viz: the presence of disturbing elements in passing from the liquid, or fluid state, to solid states or forms. The formation of ice by the crystalization of water can be looked at with our eyes, supplemented by powerful optical instruments; but while we see the results of the process, and know that only certain elements are present, we fail to get at the ultimatum; but we know the fact, demonstrated again and again, that a liquid has passed into the solid state; and, in doing so, it has assumed a crystalline form. Under some circumstances, the passing of the liquid blood, or liquor sanguinis, into solid tissue or crystalline forms, is to be witnessed by the histogenist in the web of the frog's foot. So much, fact and analogy teach in regard to nutrition, and organic tissue making or histogeny. The recent microscopical-histological researches of Beale strikingly confirms the idea that organic tissue making conforms very closely to the process of crystallization in the inorganic world.

All complex organizations tend inherently to separate into lower states, or forms of organization, and can only be restrained or retarded in this process by certain conditions, as the preservation of flesh by chloride of sodium, carbolic acid, arsenic, corrosive sublimate, low temperatures, &c. In the living body, surrounded by all the conditions requisite to speedy retrocession to lower or less complex states of its highly organized tissues, the dynamic force, liberated in the act of oxidation, is the force, in the main, by which life is conserved; and as these lower forms of organization, or effete matter, the result of the destructive metamorphosis of the tissues of the living body have been successfully formed by chemistry out of the body, the processes or means by which they are produced, both in and out of the body, can not be very widely different. To those who have followed closely the grouping of these elements, it is hoped that, with myself, they can see that we stand in the immediate presence of the solution of the inquiry, "How do medicines produce their effects?" Can it be otherwise than as they modify,

promote or retard the passing into crystalline, or solid forms, of the liquor sanguineus, into the various tissues and textures, or as they promote, retard or modify the process of retrocession into lower grades of organization of some, or all, of the constituents of the blood, or tissues themselves?

After so much, recognized and understood, there is still a further mystery, but no greater than that of the conversion of water into ice before our vision.

The cerebrum, cerebellum, medulla oblongata, spinal chord, ganglionic or plexual masses, grouped together, form the equivalents of electro-magnetism of physical science, and are to be studied as centers of the dynamics of the system, controlling alike nutrition and oxidation, not only of the remaining tissues and organs of the body, but of themselves. The gray, or cineritious, matter has the highest and most complex organization; the medullary, or white, is widely different in physical appearance, as well as structure, organization and function. The circulation through the brain proper is peculiar, the venous blood being concentrated in sinuses of large capacity, and the circulation is proportionately large in all of the nervous masses. From analogy, these form the equivalents of the electro-magnet of physics, having two dissimilar tissues, with a fluid, to furnish the conditions and means of liberating dynamic force. The analogy between the wonderful net work of telegraph wires, traversing every part of the civilized world, bringing its most distant part into almost instantaneous communication, and the human nervous system, has long been, to me, a subject of profound interest. Since this investigation has been commenced, a telegraph office has been visited, where a main battery for a short line was kindly shown to me by the manager. It was composed of a number of Grove's cells. Each cell consisted of a clear glass cup, in shape like a mammoth tumbler, holding about a quart of a clear solution of acid and water. In this acid-water was placed a plain cylinder of zinc and quick silver amalgam, as clean and bright as a mirror. Inside the metal cylinder there was a white, porous porcelain cup, holding a strong acid. A thin slip of platinum

hung in this strong acid, suspended from a copper arch, which connected this cell with an adjoining cell, and in this way the whole of the cells composing the battery were connected. From the last cell a wire proceeded to the earth, outside the building; from the first in the series, another wire proceeded to the operator's table. The acid-water furnished the oxygen; the zinc amalgam the material to be oxidized, and the only appearance that indicated the working of the battery, was the small globules of hydrogen escaping, as the dynamic force was liberated, which could flash a message to the other end of the line in far less time than has been consumed in describing it. The analogy between it and the human brain is almost complete. The exterior case, the complex materials, fluid and solid, and the oxidation coincident with the liberation of dynamic force! At the operator's table it was found that a local battery was needful to obtain sound—the language of the telegraph—corresponding with a ganglionic mass in the human body. It was, also, ascertained that on long lines, it was at times necessary to have a smaller battery, or repeater, in the main circuit, in order to secure satisfactory working. To complete the analogy, as it were, the very batteries require food—nutrition; they work about a week on this short line, and then require a renewal of their acid fluid parts, and, at longer intervals, their solid parts, to keep them in working order. It is, also, needful to remove the effete matter, resulting from the molecular metamorphosis, or oxidation, a necessary condition of dynamic integrity. Let the operator touch the key at the receiving and transmitting table, complete the circuit, and in an inappreciable time, the impulse is made manifest at a similar instrument, in the hands of another operator, speaking in an audible voice, a strange language to the uninitiated, plainly heard by the operator, or any others near by; and this hundreds, it may be thousands, of miles away! Truly a most striking resemblance to the human brain and nerves.

The processes and results of photography, bear a most striking resemblance to the ends accomplished in the human eye. A dark chamber in the eye, same in the camera; a crystalline

lens in the eye, the same in the camera ; an expanding and contracting pupil in the eye, its equivalent, by perforated diaphragms, in the camera ; an inverted image in the eye, the same in the camera. Could any resemblance be more perfect ?

But the points of resemblance between the unorganized telegraph and the human nervous system extend still further. The human being in comatose or insensible conditions, the remainder of the body, as it were, cut off from its connection with the brain, still performs, more or less perfectly, the organic acts of life ; so the telegraph worked very satisfactorily, for an hour or more, on an occasion some time since, cut off entirely from the main battery. This was coincident with unusually brilliant displays of the aurora borealis. During the prevalence of violent movements in the physical forces, the telegraph becomes unmanageable, and even dangerous, corresponding with mania and convulsions in the human being. In bad weather it works slowly and hesitatingly, not quick and sharp as in fine settled weather. These analogies might be almost indefinitely extended ; but sufficient has been stated for present purposes.

Striking as are the resemblances, there is still wanting the individuality of life. Were it not that we are studying how medicines produce their effects, as we would study any other object of natural history, as something tangible, and having an existence, rather than as a vague, mysterious, intangible something else, our investigation would here terminate. The forces in telegraphy and the dynamics of human life are correlated ; therefore, we are warranted in pushing our investigation to the utmost limit, in order to get the best possible understanding of how medicines produce their effects on the organized system under the influence of life, as having a tangible and understandable existence.

Before proceeding to apply these general facts and analogies to the elucidation of the present inquiry, a brief recapitulation of them will aid in bringing them orderly before the mind, that their application may be more perfectly understood. It has been shown, then, that the two leading processes in the organic life of a human being, the object of present study, are its nutri-

tion and waste, or its assimilation of organized food to its types and forms, and its reduction of the organic materials of these types and forms back to lower grades of organization, or inorganic states of its elementary constituents, spoken of in this investigation as constructive and destructive metamorphosis; that these processes occur among the atomic particles of matter; that these processes are by a series of gradual ascents in the scale of organization, at each stage of which new compounds are formed, until the highest point is reached, as in albumen and fibrin, when it is in a suitable condition to be assimilated, by means of minute cell organizations, to the types and forms of the various organs and tissues, in a manner strikingly analogous to crystallization in inorganic nature; that the retrocession of these elements, from their complex and highest organized states, are by the same gradual processes as was observed in their ascension, forming many new compounds of lower organization and states, as urea, lithic and uric acids, and their compounds; in which states some portions are passed out of the body, while others are reduced to their lowest inorganic states, as carbonic acid and water, but none of the retrograde compounds ever assume the same states as the ascending; that some of these ascending and descending compounds had been successfully formed out of the body, and that the processes, in or out of the body, could not be widely different; that as organization was ascending power or force, was conserved, or consumed, to be liberated again during the retrocession to lower grades of organization; that the dynamics of life were due to destructive metamorphosis of the tissues of the body mainly, though possibly not wholly, for some portions of organic food may be reduced in organization, to furnish power for other portions ascending into higher or more complex states; that these gradations are necessary to secure the ends of life: for, if the retrocession was accomplished at one step, it would be equivalent to the assumption of the gaseous form by the solid particles, composing what is called gunpowder; that though these processes are known to occur, because the facts are accomplished every moment in our own bodies, we can only form conceptions of

how they occur by studying the more elementary changes in matter and force in the inorganic world ; that the first process of nutrition is to reduce organizable matter or food to the fluid form ; that out of this fluid was formed, by means of minute cell organizations, the various organs and textures of the body ; that the most elementary metamorphosis of a fluid to the solid form was found in that of water passing into the solid state of ice ; that this was accomplished by the atoms of water arranging themselves in the crystalline form ; that it was a uniform law in the inorganic world that the crystalline state was assumed whenever a fluid passed into the solid state from solutions or liquefactions, by heat or other means ; that the process of crystallization was subject to important changes, by sudden variations of temperature, presence of heterogeneous matter, and other circumstances, greatly modifying the resulting crystalline product ; that the final act of nutrition of the different textures of the body, was the passage of organizable food or matter, from the liquid state to the types and forms of its different organs and tissues ; that thus, and thus only, by studying the changes of matter and force in their more elementary combinations, could a definite conception be formed of organic tissue making or histogeny ; that for every dynamic result observable in the human body, a material instrumentality is found ; that the reign of law is supreme in all its parts, and that nothing is left to chance ; that in arranging for study the elementary parts of the human body, having reference to its dynamics, it was found to have a dual life, conservation and relation ; that the life of conservation was remittent, while that of relation was wholly intermittent ; that during the intermission, power, or dynamic force was accumulated, or the conditions requisite for its liberation were obtained, for the period of activity ; that the period of intermission was in the ratio of $\frac{1}{4}$ to $\frac{1}{3}$ of the whole time, and must be interposed at short intervals ; that for dynamic study the elements of the body were grouped into power producers, the nerve masses, small and large ; power transmitters, the nerve chords ; power consumers, the whole organism ; that to obtain some definite conception of the complex dynamics of life, it was

necessary to study force in some of its more elementary states ; that the electro-magnetic telegraph was selected for that purpose ; that a most striking analogy was found to exist between its elementary parts and dynamic results with those of the human body ; that there was the main battery, corresponding to the brain, a local battery was necessary wherever signals were to be taken, to speak its language, corresponding to ganglionic and plexual masses, which are found in the body wherever a function is to be performed, or an organ presided over, to supplement, as it were, the main battery, or nervous mass, and render the functions to be performed somewhat independent of the central mass ; that it had wires connecting distant places, multiple wires for communicating both ways at the same time, being suspended on the same poles, corresponding to the nerve chords, containing afferent and efferent fibres ; that the dynamics of the telegraph were obtained by the reaction between the atoms of inorganic matter ; that the metals in the batteries had to undergo processes of smelting and refining from ores, to fit them for their allotted uses, a compensation for organization ; that it was during the combinations of the atoms of metal with the atoms of oxygen, or a return of the metals and fluids to their states in nature, that the forces of electro-magnetism was made available for the transmission of impressions from one place to another, almost irrespective of distance ; and, finally, that it had its freaks and curiosities, and abnormal workings, as was the case with the human nervous system ; that it was, also, necessary to form a definite idea or conception of disease. Professor Gross' definition was, that it was not a special entity, but a departure from the natural condition of health, brought about by a change of the nutrition or oxidation of a part or the whole of the body, and modified by structure and function ; that Professor Gross' definition is used only because of its precision, and not because it is not a reflex of the views of disease by the advanced medical mind of the age, for, in the very nature of things, it can not be anything else than a departure from the normal processes of repair, or renewal and waste ; that the classification of the articles of the *materia medica*, now taught in schools, and

contained in text books, based on these parts of the system only at which their effects become cognizable by our senses, was a bar to their philosophical grouping, which should have for its basis the organic acts of nutrition and oxidation.

With these facts and analogies alone to guide us, a very intelligent conception may be formed of "How do medicines produce their effects;" but to them must be added the known effects following impressions on the special senses. How does light produce vision? In no other possible way than by chemical changes in the nerve tissue spread out on its interior; and these chemical changes are oxidations, precisely as on the sensitive surface in the camera in photography. No dynamic results ever occur, only as organic matter is retrograding to lower forms of organization, or complex organic compounds retroceding to more elementary states. Gunpowder requires the presence of charcoal—carbon—to make it explosive. Gun cotton and nitro-glycerine, and dynamid (the new explosive compound), owing to more complex organization, are far more powerfully explosive compounds; still, in every instance, the dynamics are due to oxidation.

If there were no oxidations, there would be no vision; or if vision, the eye would never tire or grow weary—would, in fact, be a mere reflecting surface, as a mirror. Yet the weariness of the eye is a well known fact to all who have vision. Nor are the impressions made on the eye instantaneous. An appreciable time is required to make such changes in the nerve structure as to enable the central nerve mass to perceive images. Looking from the window of a rail car in rapid motion, no distinct images are formed of near objects coming into and passing rapidly out of the field of vision. So, interrupted light, as in walking past a paling fence, with the sun shining through it, prevents distinct vision, and soon produces weariness and actual pain in the eye. So, again, looking at regular bars or cross bars, or stripes and checks, uniform in size and colors, is painful, if not intolerable, to the eye for any considerable length of time. Intense light, as the sun in clear, bright weather, as well as very bright artificial light, produce pain, and if gazed at any

considerable length of time, may permanently impair or wholly destroy vision. How will be shown hereafter.

Sound is, also, one of the correlated forces, and for every sound perceived by the central nerve mass, or ganglion, there must be chemical changes, and, as in the case of vision, sound may, by its intensity, produce such structural changes in the auditory apparatus, as to permanently impair, or wholly destroy, the sense of hearing.

So, through the medium of vision, hearing and touch (in which are included taste and smell, as only modifications of the sense of touch), impressions may be made, succeeded almost instantly by syncope—partial arrest of the dynamics of the circulation—insensibility temporarily, and insanity more or less permanently, all by chemical and structural changes in the nerve masses, or nerve conductors, or both. These are usually spoken of as moral impressions; but they are, nevertheless, due to chemical and structural changes in the nerve masses; for it has been shown, that for every dynamic result, we have special apparatus, and chemical changes in the apparatus for every effect, and it would be alike unwise and unphilosophical to slur them over, or leave them out of consideration in solving the question of "How medicines produce their effects?"

How these premises are to be applied in obtaining a solution to the present inquiry, can be illustrated better than in any other way, by tracing single agents into, through and out of the system, and from the empirical facts of their effects, deduce the philosophy of their *modus operandi*, seeing that to produce any results at all they must in some way affect the nutrition and oxidation of its tissues.

As the first example, take chloroform by inhalation. The first particles of its invisible vapor impinging on the surfaces of the mouth or nose, makes an impression, as light in the eye, or sound in the ear, instantly conveyed all over the system by the efferent nerves; the result is an effort, almost without volition, to prevent its further introduction. The face is turned away, the hand interposed between the face and napkin from whence the vapor comes, and breathing partially suspended. This over-

come, by the will of the patient, or force of the exhibitor, the vapor passes on into the lungs, mingled with air, at each inspiration. Gradually, the functions of the life of relations are suspended, until, at a certain stage, within the limits of safety, vision, hearing, sensation, and voluntary motion, are obliterated. How? In no other possible way can this condition be produced than by bringing the organic processes, on which the life of relations depend, to a stand still. The conductors between the outer world and inner nervous masses have, so to speak, been switched off—the connection between them severed. Neglecting certain precautionary measures, or pushed beyond the point of safety, the dynamics of the life of conservation, too, are brought to a stand still—the batteries or nervous masses supplying the dynamic force for carrying on the organic processes of the circulation and respiration, have ceased to operate, and the spirit of the inhaler has passed the invisible boundary that separates life from death, to that bourne from whence none have ever returned to bring back a report, and to which we are all hastening so rapidly, in one way or another. Can the *modus operandi* of chloroform by inhalation be other than a partial or total arrest of destructive metamorphosis in the entire dynamic apparatus of power producers and power transmitters? If at a proper time the inhalation is suspended, the vapor is expelled from the system through the same channel by which it entered, and more or less suddenly the dynamics of life come into play again; in some cases without noticeable secondary results, in others with some disagreeable evidences of the rude interruption of the workings of organic dynamics. The precise how chloroform arrests destructive metamorphosis may never be known—that it does so, is certainly true.

As a second illustration, take morphia in solution, and, by injection, pass it into the cellular tissue, beneath the cuticle. What happens? The same results in kind, but not in degree, as chloroform; and with nearly the same rapidity in certain cases, depending, to some extent, on the quantity and place of its introduction. If injected for the relief of acute pain, the wild dy-

namics of life are brought within limits of safety and comfort to the sufferer. It as certainly retards destructive metamorphosis, or oxidation, as chloroform arrests it. The recovery from its influence, owing to its not being volatile, as well as the mode of its introduction into the system, is extended over more time than from chloroform, for the drug itself has to be oxidized or passed out of the system through the natural channels of elimination unchanged. But if the dose has been small enough, say one-fourth to one-half of the quantity proper by the stomach, in from two to twelve, or more hours, the organic processes of life recover their normal workings.

As another example, take an agent of opposite properties, as strychnia. As it is not susceptible of volatilization, except in the form of spray, let us inject a solution beneath the cuticle, as in the case of morphia. Its operation is nearly equally as prompt as chloroform; and what happens? Oxidation, or destructive metamorphosis is promoted in the spinal chord, and ganglionic and plexual masses, dynamic force is liberated, and sluggish organs and muscles are supplied with power to perform their allotted offices and functions more promptly and perfectly. If the quantity injected, or otherwise exhibited, is in excess, the voluntary and involuntary muscles are thrown into violent and painful contraction. Either condition continues until the strychnia is oxidized, or otherwise passed out of the system. So energetic and powerful is this agent, when used hypodermically, that its dose, to be safe, must be counted by hundredths of a grain. If death ensues from an over dose, it is by interrupting the alternate contraction and relaxation of the muscles of respiration, and the central organ of the circulation, the heart.

In arriving at these conclusions, we can not, it is true, watch, with the material eye, each little particle of organic matter forming new compounds of lower organization and liberating force, that may never be vouchsafed to mortal vision; but as the antecedent and consequent are both known, we feel safe in bridging over the chasm, by assuming that it is accom-

plished in the same or analogous manner to the play of atoms in liberating force in the magnetic telegraph.

These are, however, exceptional modes of introducing therapeutic agents into the human system, though they constitute contributions to modern scientific medicine, whose value it would be difficult to compute. They are introduced here to show that the mode of operation of therapeutic agents is mainly the same, no matter how introduced into the system. As the conditions governing the employment of remedial agents hypodermically become more generally known to the profession, this mode of administration, for certain ends—particularly for the immediate relief of pain, owing to its certainty and celerity—must come more and more into general use, until, finally, no practitioner will be without a hypodermic syringe and solution of morphia.

For most purposes, and by far the most frequent, in the future, as in the past, medicinal agents will be introduced into the system by the mouth and stomach. Here, owing to conditions, the effects are generally more slowly evolved—more time is consumed in obtaining results—not because of any difference in their mode of producing results; for it can not be too frequently impressed, that no matter how introduced, these are in the main the same.

For illustration here, the Hydrargyri Chloridum Mite is selected. Introduced into the stomach, the nervous system seems measurably indifferent to its presence; force is neither promoted or retarded by it in any considerable degree. It is, however, certainly rendered soluble in the stomach, by means not definitely known, and is taken up by the circulation and distributed over the whole system. What happens in this case? In the circulation, to the extent of its capacity in quantity, it arrests the formation of albumen, and the metamorphosis of albumen into fibrin, and converts into excrementitious matter those substances already in existence in the blood, to the extent of its chemical equivalents. It further, either of itself, or the compounds it forms with albumen and fibrin, supplies conditions for the more or less rapid disintegration of the tissues already in existence, so that the bulk of excrementitious matter in the

system is largely augmented. It has, in fact, measureably arrested nutrition or constructive metamorphosis, and largely increased waste, or destructive metamorphosis, not so much, perhaps, in the nerve tissues, as in other solid structures, so that the circulation is loaded down with excrementitious matter. In the elimination, if the emunctories fail to give it exit from the body with sufficient rapidity, the soft tissues of the mouth break down as if solutions of continuity were purposely established to give exit to the effete matter. The retrograde metamorphosis, apparently no longer under the control of the dynamics of life, form abnormal compounds especially obnoxious to the special senses of smell, taste and vision. The impressions on these senses by the effects of mercurial salivation and those of the ordinary putrefactive decomposition of animal tissues, have a striking similarity. It is not my purpose to make any effort to banish calomel from the *materia medica*. This very view of its *modus operandi* makes it an especially valuable agent for the very purpose of destroying tissue in certain pathological conditions, while, at the same time, juster views of its effects will materially limit its indiscriminate exhibition in obscure, or other cases, where its effects are not needed; for, it is true, that every case of disease does not require destruction of tissue, as a requisite to a return to health. It is almost, if not quite, a pure destructive.

As another illustration, take some form of iron, say the *Ferri Redactum*. Introduced into the stomach, it is, or certain portions of it, rendered soluble by its chemistry, and passes into the circulation. What does it do? In the fewest words, it quickens every act of life. The iron, or its organic compound, hæmatin, in the blood, carries the life-giving oxygen to every organ and tissue, and brings back to the lungs the carbonic acid resulting from these quickened operations. Increase of red discs, the oxygen and carbonic acid carriers; increase of albumen and fibrin; increase of muscle and other tissues. Effete matters are oxidized and passed out of the body, and the utmost activity prevails in all the organs and tissues. As in the animal organic world, the presence of iron in greater or less quan-

tities marks its highest development and activity, so in the social and physical, it plays an equally conspicuous part. It is intimately identified with civilization. Where it is most largely consumed there is the highest development of social and industrial activities, and the diminution of its consumption marks the different stages between the highest civilization and complete barbarism. Railways, telegraphs, steamships and machinery, are the results of a high degree of civilization; for without iron, these could have no existence. Therapeutically, it is an example of a pure constructive.

As further illustrations, iodine and bromine, and their compounds, with potassa, soda and ammonia, may be considered. These are readily absorbed, as they are all more or less completely soluble in water, and are active agents in promoting oxidation of effete matter; primarily, and secondarily destructive metamorphosis in the normal tissue to a certain extent, but more especially of adventitious growths, as enlargements, tumors, &c., &c., all of which possess lower vitality, or organization, than normal tissue; and hence, these sometimes disappear with surprising rapidity under the influence of the iodides and bromides.

The good effects of the bromides of potassium, sodium, &c., &c., in nervous disorders, are probably due entirely to their oxidation and elimination of excrementitious matters, or matter below the normal grade of organization in the systems of those who thus suffer. The idiosyncrasies forbidding the use of opiates, so frequently met with in urban communities, must be largely due to defective oxidation and elimination of excrementitious matter, brought about by the habits of society, to wit: highly azotized food, sedentary lives and the habitual use of tea, coffee and spirits, limiting, as these are known to do, molecular changes, particularly of the retrograde metamorphosis of tissues, and the elimination of effete matters.

But these examples need not be multiplied. The general principles illustrated by them are applicable to every therapeutic agent, or measure, of whatever kind or character. As all diseased action is a departure from the normal standard of nutri-

tion, the *modus operandi* of diseased action and therapeutic agents must necessarily be antagonisms. If diseased action consists of too much, or too little force, the action of medicines for its relief must be exactly the opposite, liberating more force where it is deficient, and restraining it where it is in excess. Thus, the cardinal point of the Hahnemanic faith is shown to be an absurdity.

While the facts of nutrition and waste, and their philosophy, and that medicines must, *per se*, to have any influence whatever, interfere with them, has been definitely established, it is, nevertheless, interesting to know that each new truth evolved by experiment or philosophy, confirms them still further. Thus, the recent physiological experiments of Richardson, of London, with his ether spray, in freezing the brain, and parts of the nervous system of birds and lower animals, are followed by results precisely analogous to those of chloroform, when the whole brain was frozen. The organic processes of life are brought to a stand still in either case, dependent on the whole, or parts of the nervous system, experimented on. And herein we have the philosophy and *modus operandi* of Chapman's ice bag to the spine in cholera and other disease conditions. Lowering the temperature of the brain, or any part of the power producing masses of the nervous system, arrests the liberation of force to an extent precisely corresponding to the depression of temperature until the freezing point has been passed. It will be found hereafter to be a very valuable therapeutic measure. The therapeutic results reached by Chapman must be verities, though in none of his published papers, meeting my eye, has he attempted to explain its *modus operandi* so exactly as it is here done.

The interference of atmospheric vicissitudes with the final process of nutrition, to wit: the passage of albumen and fibrin through cell organizations (or granules, according to Beale,) into the solid textures of tissues and organs, must be very considerable, all in fact that the popular belief attributes to "*taking cold*." In this, the popular instinct and scientific deductions and experiments agree as to results, however much they may differ as to the *modus operandi*. The fruit germs, in the vege-

table world, if subjected in their earlier stages of development or growth, to sudden changes of temperature, and other atmospheric vicissitudes, not so low as to destroy them, but near that point, are followed by fruit marked by unequal development and growth—knotty and imperfect, as horticulturists say. So in the vegetable world we have what are called tender plants, in this latitude, i. e. natives of more southern climes, domiciled with us for their fruits, flowers or foliage, that do not bear violent variations of temperature. What can this be but the interference of atmospheric changes—and in this idea is included the variable operations of the forces of nature—with the ultimate processes of cell development and nutrition? In the tropics, where sudden changes of temperature are comparatively rare, the vegetable, as well as the animal kingdoms, flourish in their highest exuberance. As we go northward, one by one of these disappear, until, in the Arctic regions, nothing is left but a few lichens.

Striking as are these instances and examples from the organized world, they are still more striking and significant in the inorganic. The softest and most malleable and ductile steel is, by sudden change of temperature, rendered so hard as to be competent to impress every other substance, the diamond alone excepted, in nature.

The skill and ingenuity of man has, as yet, been unable to produce a time piece escapement to run with absolute regularity in variable temperatures, and subjected to counter motion. Adjusted chronometer balances in watches, and mercurial pendulums in clocks, still fall below absolute accuracy. Almost every other contingency can be provided against, except changes of temperature. Some years since a disk of crude iron, 9 feet in diameter, was cast in one of the foundries of this city. In filling the mould three streams of liquid metal were used. The piece was successfully cast, as the proprietors thought. When cool enough to handle, it was removed, and set up against the outside of the building, facing the South. Before mid-day, the rays of the sun falling on it directly, the disk had fallen into many pieces, with loud explosions. Each fluid stream had passed into

the solid state with its own crytallization. Each proved different, and had its own rate of expansion, and hence, when the warmth of the sun influenced them, the disk separated into many pieces. The examples of these effects are so numerous, that wherever there is matter and force illustrations will be found.

The same influences produce visible and tangible effects on the exterior tissues of the human body. In warm weather the cutis is soft, elastic and smooth. As temperature goes down, it is roughened, rendered inelastic, cracks open, and shrinks in volume. Can it be possible that these results extend no further than the coverings of the body?

When it is recollected that the gigantic commerce of the world owes its existence mainly to man's endeavors to surround himself with the all-important equal temperatures, irrespective of geographical position, such a supposition would seem to be absurd. The earth is perforated, and its hidden treasures of fuel, ores, metals, stone, marble, clay, sand and minerals, are brought to the surface, to build, light and warm his dwellings, and to construct the vast manufactories engaged in fabricating cotton, flax, silk and wool, into articles of necessity and ornament, mainly to preserve that equal temperature about his body upon which life, health and comfort is so largely dependent. The pro rata of mortality is smallest where there is least variation of temperature, no matter what the mean diurnal or annual average; and largest where changes are sudden and variations of temperature extreme. In the winter men are clad in wool and furs, and linger about fires, in dwellings. In summer, dwellings are forsaken, and the fields and woods afford the highest physical and mental gratification.

What do these facts mean if unequal temperatures have no influence on the normal reproduction of tissues and organs? The tissues in health are examples of the highest organization in the universe. No amount of force can raise organizable matter higher. All changes, no matter how brought about, are to lower forms of organization. A very large number, if not all, of the incurable diseases with which mankind suffer, are

due, taking the testimony of pathological anatomy, to the substitution of tissues of lower organization in the nervous, muscular and visceral textures, than normal. The bane of refined, as well as of advancing life, is the failure of the dynamics of the system to force food into higher states of organization than fat and fibrinous tissue,

But, unequal temperatures are but one of many causes, all tending to reproduce tissue of lower than normal standard, at the points heretofore named.

Whatever other causes operate to produce intermitting and remitting diseases, sudden and violent variations of temperature are among the most active. These appear in spring and early summer, and again in the fall, and disappear as the weather is settled into summer and winter. The interference of these variations with the ultimate passage of cells (or granules, according to Beale) into solid textures, during one part of the 24 hours, of a day and night, can hardly result in perfect and normal tissue. The layers (supposing tissue to be thus built up) are, probably, perfect and imperfect. A paroxysm of fever may be an effort of the dynamics of the system to oxidize and expel the blighted tissue. The cause continuing in activity, insures a continuance of the paroxysms. The unaided efforts of the system in the oxidation and removal of this defective tissue, has given credit to many therapeutic agents and measures for powers and results, which they do not and never can possess. A very sensitive system may set up for the oxidation and expulsion from it of this defective tissue, intermittent fever; another, more tolerant, may allow its accumulation to a certain extent, and then set up a remittent or billious fever; while, in still another, still more tolerant than the second, the accumulation may go on until a continued or typhoid fever is the result. If, on the other hand, the quantity is excessively large, the result, the cold plague or pernicious fever, the dynamics of life, as it were, stamped out, no reaction, no pexoxidation, set up for its removal, death in the first stage or rigors.

Let this hypothesis be true or false, it embraces, explains and harmonizes all the phenomena of fever. By an extension of it

all fevers may be satisfactorily explained—as well as contagion and infection; indeed, it is capable of explaining very many phenomena for which no rational explanations have ever been offered.

The final act of nutrition, the passage of the liquor sanguineus, through cell organizations, to the types and forms of the solid tissues, textures and organs, may be, and not unfrequently is, interfered with, and the tissues themselves more or less permanently damaged or modified by mechanical causes, as falls, shocks by railway or other accidents, mental and moral impressions, habits of life, as opium eating, habitual drunkenness, hereditary influence, imperfect or improper nourishment, advancing life, &c. Shock by railway, falls or other accidents, may be understood, if the subsequent train of events be referred to changes in the molecular structure of the nerve masses, and, in many instances, perhaps, invisible, even to the microscopically aided eye. If the crystalline structure has been broken up by violence, death ensues speedily, as was the case with the late President Lincoln. If modified so as to impair its dynamic integrity, the progress of decline is more gradual, but none the less certain to a fatal termination; or, if only partially damaged, recovery may be partial, seldom complete. If not interfered with, recovery will be, sooner or later, complete.

Spinal pariesis, locomotive ataxy, paralysis, imbecility, opium eating, habitual intemperance, insanity, chorea and persistent neuralgia, may be understood in the same way. And, if so viewed, a great deal of unnecessary, erroneous, not to say damaging, treatment will be avoided. The effect of imperfect nourishment, coupled with moral depression, were fully shown in those confined in the Andersonville and other military prisons, during the late war.

In the failure, little by little, to reproduce in full dynamic integrity, as life advances, the normal structure of the nerve masses, we may read the fiat, that all organic life must fade and die. (Long after this was written and delivered, Dr. Gull, at the meeting of the British Association, in August, 1868, spoke of advancing life as being due to failing tissue.) So, in another

class of maladies, the so-called hysterical, we may study the abnormal working of the nervous system unconnected, in many instances, with molecular changes. The dynamics of life overleap their natural bounds, and in the nature of things, must simulate all the graver forms of diseased action, depending on structural changes, because the same instrumentality in both cases bring the phenomena within our comprehension.

The hypothesis of interference with organic tissue making, by the various disturbing agencies enumerated, is, indeed, so broad, as to offer understandable explanations of many hitherto unexplained phenomena in the dynamics of life.

Attention was drawn to the fact, that violent variations of temperature interfered with the formation of perfectly clear crystalline ice from water, as well as on the evolution of vegetable fruits. It is a very singular circumstance, that a vegetable drug, which can only be perfected in its evolution at a particular elevation in tropical climates, characterized by an almost absolute evenness of temperature—for the plateau of the Andes, on which alone the cinchona barks yielding the alkaloid quinia can be successfully grown—is characterized by a temperature so even as not to exceed in variation two degrees of F. thermometer between day and night, and throughout the whole year. The cinchona will grow in our latitude, but its bark will yield no quinia. This vegetable drug, which can only be grown under such an even temperature, is the absolute specific for diseases caused by the opposite extreme of violent variations of temperature. A most wonderful coincidence, as well as wonderful fact! By this we can understand the *modus operandi* of quinia, and in no other way. It seems to compensate, or furnishes conditions to perfect the formation of normal solid tissues, as well as the disintegration, oxidation and expulsion from the system of the debris of imperfect tissue, caused by the interference of atmospheric vicissitudes with the processes of organic tissue making.

Prof. Wood, in the days of my pupilage in the University of Pennsylvania, had a class of unclassifiable medicines, in which he placed calomel, strychnia, arsenic, &c. The classification

submitted to your notice to-day, though so simple, will, it is believed, absorb the whole *materia medica*, past, present and future, as well as every conceivable hygienic and remedial measure. Every article and every agent employed in the treatment of diseased conditions of our fellow men, will take its place naturally, not by force, in one or the other of the classes, as they influence nutrition and oxidation. It fulfills the requirements of scientific exactness, and explains how medicines and therapeutic agents produce their effects. For it has been shown that neither medicines, therapeutic or hygienic agencies, can have any influence, other than as they promote, retard or modify the organic acts of life—nutrition and oxidation.

At all events, it will be found to simplify very much the practical application of our art at the bed side, not only in diagnosis, but in therapeutics and hygiene. Disregarding entirely the nomenclature of disease, and the classification of therapeutic agencies now taught in our schools, and literature, each case of altered nutrition or disease, when considered on its own merits, is much more readily comprehended and treated; for, says Benée Jones, where there is found deficient, or excessive oxidation, or nutrition, the latent (so to speak) powers in food and medicine, may be made to restrain here, promote there, and so bring about that equilibrium of the forces of life which constitute health. Practical medicine will be advanced toward the position it is ultimately destined to occupy, of an exact science, whose sources of error will be confined principally to the variable and uncertain character or qualities of medicines themselves. But, with the isolated alkaloids now known, as morphia, strychnia, digitaline, santonine, quinine, &c., &c., and other which chemistry will place at our command, these may be reduced to their minimum.

The time already occupied admonishes me to close, not because the subject has been exhausted, but because other interesting topics may claim attention and discussion. What has occupied my thoughts and investigations so many months, and been rewarded, to me, at least, by so many interesting and satisfactory results, may fail to impress you, as they have me, owing to my

own imperfection in reproducing my mental operations in your minds. Following, as has been done, the organic processes of life, so closely, multiple sources of error have been avoided, and the conclusions arrived at have probability of truth, which they could not have from other premises.

In closing, it may be proper to reiterate, that the mode or modes by which medicines produce their effects, have been studied in this connection, as any other objects of natural history—as something tangible, and existent, and subordinate to law or laws. An effort has been made to formulate the laws governing their dynamics. The ordinary forces of the universe have been traced from their most elementary movements in inorganic matter, to their most complex correlation in the highest types of organization in the human tissues.

The life, or vital force, or forces proper, which has embarrassed this inquiry for so many centuries, seems to be entirely confined to the preservation of the types and forms of organic tissues and organs, in the midst of constantly dissolving and renewing material.

The germ has been in all cases the starting point, and no effort made to go behind it; nor has any effort been made to trace the ordinary forces of nature into either the germ, or the types and forms of organic life. For, in the words of Prof. Jackson, "In the ever-enduring beauty, order and harmony of organic nature, is evidenced the existence of a dominant force, far transcending the physical forces in the higher and more exalted nature of its productions—a ray, as it were, emanating from the Divine Intelligence itself." That undue prominence has been assigned to the vital force in physical organization at all times, is evidenced by the facts, that it is easily overborne, modified and extinguished by the ordinary physical forces—else, we should have no pathological anatomy, disease and death. It should have, therefore, this subordinate position assigned to it. Every pathological lesion, every case of disease and death, are witnesses to the feebleness of the vital force, when contrasted with, or opposed, to the ordinary modes of force.

The true position of the vital force in organic nature seems

to be that of ARCHITECT OF ORGANIZATION—the preserver of form with changing material; and the tendency to escape its restraints in types and forms of organization, is the sole fact why we, as physicians, are needed. In so far, then, as the ARCHITECT is superior to the LABORER, so far the vital transcends the physical in its purposes and position. “It is,” again using the language of Prof. Jackson, “so to speak, the moulds in which organic elements are poured as they ascend in organization through the vegetable to the highest types of animal tissues, as well as their retrocession back to their starting point in the inorganic world.” “It is only while organizable organic matter is in these moulds, stamping, as it were, in material forms, a revelation of the creative ideas of the Eternal Artificer;” and it is but a brief moment at longest that the vital force contests and directs the operations of the ordinary physical forces in ascending and descending organization.

PULVIS IPPECACUHANÆ ET OPII.—Perhaps there is no medicine in the materia medica more frequently prescribed by physicians than Dover’s Powder; and it is quite essential that it should be the best possible preparation that it is susceptible of being made. According to the Dispensatory, its largest constituent (the sulphate of potassa) serves no other important purpose than by its bulk to dilute, and by its hardness to promote the minute division and thorough intermixture of the other ingredients. There is another salt of potassa (the chlorate) which, in addition to the above requisites, possesses valuable medicinal properties well suited to increase the efficacy of the compound, and can never be contra-indicated in any disease in which the Dover’s Powder is administered. There are a great many diseases in which the powder is used more or less, that are complicated, with a sore mouth or throat, which the chlorate would rapidly cure; and I have been pleased with the enhanced efficiency of the preparation in these febrile states consequent upon taking cold and attended with a sore throat; also in bowel complaints, diarrhœa, cholera infantum, etc. Now, I respectfully suggest, that sulphate of potassa in the Dover’s Powder be displaced by the chlorate of potassa in the next edition of the *U. S. Pharmacopœia*.—*Boston Journal of Chemistry*.

Cotton Plant as an Emmenagogue

650

Indigenous Remedies of the Southern States.

INDIGENOUS REMEDIES OF THE SOUTHERN STATES WHICH
MAY BE EMPLOYED AS SUBSTITUTES FOR SULPHATE OF
QUININE IN THE TREATMENT OF MALARIAL FEVER.

JOSEPH JONES, M. D., Professor of Chemistry in the Medical Department of the
University of Louisiana, New Orleans, La.

in the *St. Louis Med. Rep.*
No. 23 COTTON PLANT, GOSSEYUM
The numerous varieties of the Cotton Plant in the Southern
States have been referred to two species, viz: the Short Staple,
Upland or Green Seed (*G. Herbaceum*), and the Long Staple,
Black Seed or Sea Island (*G. Barbadense*).

The former variety is said to be a native of India, Africa and
Syria, and the latter of Barbadoes. The ancient Mexicans are
said to have cultivated cotton at the time of the Mexican con-
quest; and the relation of the genuine Mexican variety to the
plant, as it is found in India and China, would be of interest
not only to the botanist, but also to the archaeologist, seeking
the origin of the Mexican and Peruvian nations, with their
peculiar forms of civilization.

It has been claimed, by a number of practitioners of medicine
in the Southern States, that the root of the gossypium (*cotton
plant*) possesses the power of stimulating the uterus, so as to
cause abortion when administered to the pregnant female, or
the return of the menses in cases of amenorrhœa. It has also
been said to equal ergot, in its power of exciting uterine con-
tractions during labor.

Dr. Bouchelle, of Mississippi, who believes it to be an excel-
lent emmenagogue, and not inferior to ergot in promoting
uterine contraction, states that it is habitually and effectually
resorted to by the negroes of the South for producing abortion;
and thinks that it acts in this way without injury to the general
health. To assist labor, he employed a decoction made by boil-
ing four ounces of the inner bark of the root in a quart of
water to a pint, and gives a wineglassful every twenty or thirty
minutes.

Dr. Ready, of Edgefield District, South Carolina, says that
his attention was called to its emmenagogue properties by an
article which appeared in a medical journal, published some
years since. He has since used it in suppression of the menses,

but more particularly in many cases of flooding, with entire success. Dr. Ready believed it to produce as active contractions of the uterus as ergot itself.

Dr. Porcher states that, in South Carolina, much use is made of the root in the treatment of asthma—a decoction being generally employed.

This plant has been used in the South and West as a substitute for quinine in intermittent fever.

Professor H. R. Frost, of Charleston, S. C., communicated to the *Charleston Medical Journal and Review* the following facts with reference to the use of the Cotton Seed (*Gossypium Herbaceum*) as an anti-periodic in intermittent fever :

“The information is derived from Dr. W. B. Davis, of Monticello, Fairfield District, S. C., in reply to inquiries made by him as to the medicinal properties and uses of cotton seed tea in some of the forms of fever. The use of cotton seed tea in fever originated with a planter in Newberry District, who has used it liberally among his negroes, and uniformly with success. ‘I have never failed,’ says he, ‘to cure a patient with a single dose of it, even where large doses of quinine have failed. When the patient has been ill of third-day fever and ague, and for months, in such cases success has followed its use.’

“Professor Shepard’s analysis of Cotton Seed shows it to be composed of many inorganic matters, some of which may really possess great medicinal virtue in this disease.

“The mode of using Cotton Seed tea is as follows: after having given a dose of calomel, the day or night previous to the attack, followed by castor oil in time to produce a cathartic effect before administering the tea, you put a pint of Cotton Seed with a quart of water, in a vessel, boil an hour or two. Before the usual recurrence of the ague, give the patient a gill of the warm tea to drink.

“Without advancing any opinion in reference to its exhibition, whether for or against, I present it to the notice of the profession as a remedial agent becoming popular in domestic use in the section of country mentioned, and, therefore, claiming investigation on the part of the profession.”

H. D. Brown, of Copiah county, Mississippi, communicated to one of the newspapers during the recent war the following notice of the use of Cotton Seed tea as a substitute for quinine :

"I beg to make public the following certain and thoroughly tried cure for ague and fever : one pint of Cotton Seed, two pints of water, boiled down to one of tea, taken warm one hour before the expected attack. I have tried this effectually, and unhesitatingly say it is better than quinine ; and, could I obtain the latter article gratuitously, I would infinitely prefer the Cotton Seed tea. It will not only cure invariably, but permanently, and is not at all unpleasant to the taste."

NO. 24.—*CASTANEA VESCA* AND *PUMILA*—(CHESTNUT).

Dr. Nelson Burgess, of Sumpter District, S. C., says that he had used the decoction of the root and bark of the Chinquapin frequently as a substitute for quinine in intermittent fever with decidedly satisfactory results. Hot water is poured over the root and bark, and a large quantity taken during the twenty-four hours previous to the expected chill.

NO. 25.—*ALNUS SERRULATA*—(ALDER).

The inner bark is emetic and tonic ; an infusion of it has been given in intermittents with considerable success.

NO. 26.—*POLYGONUM AVICULARE*—(KNOT-GRASS.)

Dr. Bourgois announced, in 1840, that this plant was an excellent febrifuge, and was used in Middle Africa and Algeria as a substitute for quinine in the fevers of this country. It has been used as a popular remedy in this country in intermittent fevers, but we have no positive data at hand on the subject.

NO. 27.—*PRINOS VERTICILLATUS*—(BLACK ALDER, WINTER BERRY).

The berries and bark of this plant are tonic and astringent, and are used in intermittent fevers, diarrhea, and diseases connected with a debilitated state of the system, especially gangrene and mortification.

Dr. Amos Gregg, Jr., of Bristol, Pennsylvania, recorded the following observations "on the use of the *Prinos Verticillatus*, or Black Alder, in intermittent fevers and other diseases :"

"My experience is confined to its use in remitting and intermitting fevers; and it was the bark alone which I used.

"The first case was that of a boy, aged fourteen, in remitting fever. Four days before I saw him he was seized with vomiting and pain in the bowels. On the second day he was seized with chill and fever, attended with pain in the back, head, &c.; he was costive, his skin hot, without thirst, his tongue furred, attended with delirium. There had been no remission for more than twenty-four hours when I saw him. In the afternoon I drew six ounces of blood, and ordered a draught of antimonial wine and laudanum at bed-time, and the next morning gave him a cathartic, which brought on a complete intermission.

"The decoction of the *Prinos* was now ordered, which entirely prevented a return. He took three drachms in six ounces of water.

"The second case was that of a woman with quotidian fever, fixed pain in the side; hot skin; small, hard pulse; costiveness; and painful respiration. A purgative was exhibited, and afterward tonics, such as the bark of the *cornus sericea*, camphor, laudanum, &c., were given, for one week, with no material advantage; a chill came on at three o'clock in the afternoon, and the fever lasted several hours. The pulse became softer, I now ordered one drachm of the pulverized bark of *Prinos*, to be given every hour during the *apyrexia*. She took only three powders, and suffered no relapse.

"When it is exhibited in powder, I am disposed to believe, it is nearly equal to the Peruvian Bark. When the stomach would retain the powder, I did not fail in a single instance; and in one case only was it rejected.

"Like the Peruvian Bark, it succeeded best when it was given immediately after the sweating stage.

"In general, I gave it alone; but, to prevent diarrhea, an effect it occasionally produced (though less commonly than the Peruvian Bark), and to prevent pain, I sometimes added a few drops of laudanum. In one instance only I applied it to the skin. One of my patients, a child, while using a decoction of *Prinos*, discharged worms. It is no uncommon thing to see

worms discharged during fevers; and future experiments must decide whether, in this respect, the *Prinos* is superior to the other bitter tonics.

"The bark of this vegetable makes an agreeable bitter, with proof-spirit."

NO. 28.—*VERBASCUM THAPSUS*—(MULLEIN).

Equal parts of Mullein leaves and the bark of the root of *Sassafras*, boiled in water and concentrated, then mixed with powdered *Sassafras* bark to form pills, are reputed valuable in the treatment of agues. The plant is tonic, demulcent and emollient, and is considerably used as a popular remedy.

NO. 29.—*SABBATIA ANGULARIS*—(PURSH, AMERICAN CENTAURY).

Employed in domestic practice in intermittent fever, but principally to invigorate the stomach and alimentary canal.

NO. 30.—*APOCYNUM CANNABINUM*—(INDIAN HEMP, DOGS BANE).

This is esteemed to possess great virtues in arresting intermittent fever, and is used as a substitute for quinine in popular practice.

NO. 31.—*CHIONANTHUS VIRGINIA* —(OLD MAN'S BEARD. POISON ASH.)

An infusion of the roots was once given in long standing intermittents, but at present not much used.

NO. 32.—*ILEX OPACA*, OR AMERICAN HOLLY.

A few years since the leaves of the European Holly gained some reputation in France as a cure for intermittents, and were considered by some as equal to Peruvian Bark; but the first reports in their favor have not been fully confirmed. The leaves were used in powder, in the dose of a drachm two hours before the paroxysm; and this dose was sometimes repeated frequently during the apyrexia. Their febrifuge virtues are said to depend on a bitter principle, for which the name of *ilicin* has been proposed. M. Labone obtained this principle by boiling a filtered decoction of Holly leaves with animal charcoal, allowing the charcoal to subside, washing it, then treating it with alcohol, filtering off the alcoholic solution, and evaporating to a syrupy

consistence. The liquid thus obtained was very bitter, and, on being allowed to evaporate spontaneously, yielded an amorphous substance, having the appearance of gelatin, which was the principle in question. The *berries* are said to be purgative, emetic and diuretic; ten or twelve of them will usually act on the bowels, and sometimes vomit. Their expressed juice has been used in jaundice.

NO. 33.—*PLATANUS OCCIDENTALIS*—(SYCAMORE, BUTTON WOOD).

Dr. Benjamin Smith Barton, in 1805, in his journal, made the statement that the bark of this tree had been used with some success in the intermittents of Virginia and some other parts of the United States. It is sometimes used at the present day for its tonic effects in the bitters so often taken as a preventive of the return of ague.

NO. 34.—*PTELEA TRIFOLIATA*—(WAFER—ASH—WINGSEED).

This plant has been recommended in the treatment of fevers by Dr. O. F. Potter, of St. Louis. It is a shrub of from six to eight feet in height. The leaves are trifoliate, and marked with pellucid dots. The flowers are polygamous, of a greenish-white color, and of a disagreeable odor. It flowers in May and June. It is common in the Central and Southern States, growing on rocky banks and at the edge of woods, from Florida to Ohio, and is especially abundant west of the Alleghanies. The bark of the root possesses its peculiar medicinal properties, which it yields to boiling water; but alcohol is its best solvent. The bark, when dried, is of a light-brownish, yellow color externally, and of a yellowish-white internally, and comes in cylindrical rolls or quills, from one to several inches in length. It has a peculiar, rather aromatic, smell, and a bitter, pungent and rather acrid taste, yet nothing disagreeable. Dr. Potter has been using it for a number of years as a tonic, following the use of quinine in all grades of fevers; also, in cases of general debility, connected with gastro-enteric irritation, as a prophylactic against malarial attacks, and as a sustaining and strengthening tonic and stimulant in debility connected with or follow-

ing wasting ulcers or scrofulous sores. It is mild, unirritating, having a soothing influence on the stomach, promoting digestion.

NO. 35.—CAPSICUM—(CAYENNE PEPPER).

The quick and energetic stimulant effects of Capsicum render it valuable in some cases of intermittents, especially in the stage of collapse.

In some cases of intermittents, attended with a want of gastric susceptibility, it may, with advantage, be added to the sulphate of quinia.

In combination with other stimulants, as sulphuric ether or alcoholic stimulants, or alone, it may be usefully and effectually employed in warding off the chill. In those who are exposed to the constant action of malaria, a draught of red pepper tea every morning upon waking is said to be a valuable prophylactic; in like manner, it may be administered for the same end to those who have been chilled by drenching rains in the summer and fall in malarious regions.

THE SECRETS OF THE OCEAN.

Mr. Green, the famous diver, gives the following sketch of what he saw at the "Silver Banks," near Hayti: "The banks of coral, on which my divers were made, are about forty miles in length, and from ten to twenty in breadth. On this bank of coral is presented to the diver one of the most beautiful and sublime scenes the eye ever beheld. The water varies from ten to one hundred feet in depth, and so clear that the diver can see from two to three hundred feet when submerged, with but little obstruction to the sight. The bottom of the ocean, in many places, is as smooth as a marble floor; in others it is studded with coral columns from ten to one hundred feet in height, and from one to eighty feet in diameter. The tops of those more lofty support a myriad of pyramidal pendants, each forming a myriad more, giving reality to the imaginary abode of some water nymph. In other places the pendants form arch

over arch ; and, as the diver stands on the bottom of the ocean, and gazes through in the deep winding avenues, he finds that they fill him with as sacred an awe as if he were in some old cathedral which had long been buried beneath old ocean's wave. Here and there the coral extends to the surface of the water, as if the loftier columns were towers belonging to those stately temples that are now in ruins. There were countless varieties of diminutive trees, shrubs and plants in every crevice of the corals where water had deposited the earth. They were all of a faint hue, owing to the pale light they received, although of every shade, and entirely different from plants that I am familiar with that vegetate upon dry land. One in particular attracted my attention ; it resembled a sea fan of immense size, variegated colors, and the most brilliant hue. The fish which inhabit these 'Silver Banks' I found as different in kind as the scenery was varied. They were of all forms, colors and sizes—from the symmetrical goby to the globe-like sunfish, from the dullest hue to the changeable dolphin."—*Journal of the Telegraph*.

BEEF TEA.

According to Dr. Bigelow, this may be made more palatable to the fastidious palate which has become palled by a steady use for a month or two of it, by a few whole cloves and shreds of onion ; but most people relish its delicious meaty flavor quite as well when it is simply made by chopping lean rump beef into pieces the size of dice, covering them with cold water in the proportion of about three pints to two pounds, letting the whole stand a couple of hours to soak in a saucepan, then drawing it forward upon the range, where it will gently simmer for ten minutes, and salting and pouring it out just as it comes up to a brisk boil. If the meat be just slightly browned on both sides (not broiled through, remember), before being chopped, the flavor of the beef tea is, to many tastes, made still more exquisite.

Dr. Tanner suggests the addition of a small tablespoonful of

of cream to a teacupful of beef tea, which renders it richer and more nourishing.

He also recommends the following wash: Two ounces of pearl sago until the water poured from it is clear; then stew the sago in a half pint of water until it is quite tender and very thick; add to this one-half pint of boiling cream and the yolks of four fresh eggs; then stir the whole carefully into one-quart of beef tea. These very nourishing broths are very useful in many cases of lingering convalescence after acute disease, when simple beef tea becomes distasteful or inefficient. For it is not sufficiently well known that beef tea, as ordinarily made, is not very nutritive; as a pint of fine beef tea contains scarcely a quarter of an ounce of anything but water.

M E D I C A L R E P O R T E R .

ST. LOUIS, DEC. 15, 1868.

American Medical Colleges.—Whatever may be said of our system of medical education, it can not but be acknowledged that nowhere in the wide world of medical science is there exhibited more enthusiasm among the students, in their arduous pursuits, or a more conscientious discharge of duty among the professors. In looking over our exchanges at this season of the year, we, and how much more the stranger, must be impressed, with the operation of the great system of medical teaching which everywhere in this country prevails; and system it is, of exceeding magnitude, with all its shortcomings, with all the faults that we may discover. Gathering around the older Eastern colleges, are found classes as large, and, according to some, larger than those accustomed to meet in the centers of medical lore in Europe; scattered over the rest of the country are institutions not less well organized, not less active and successful in the accomplishment of their duties. Each in the range of its influence does some good, and will send out into the world men who will fill some honorable position, in spite of the deficiency in the numbers and length of the winter sessions; and if there be other

graduates who do not succeed so completely, may we not quite as well attribute their failure to themselves, as to the imperfections of any system of teaching. We understand full well what is lacking in our way of teaching medicine. Those who have the most experience in lecturing, feel intuitively that this is not the best way of impressing firmly the minds of the students; all are not educated to such kind of study; many so educated are not the most successfully taught; and if we are deficient, probably from that very reason, we recognize some of the defects in a European medical education, for on turning to that country for aid in reformation we do not obtain it. On the contrary, we see their best men pondering over the problem, without solving, though aided immensely by their governments, which stand ready to order whatever may be suggested to be done. What greater hospital advantages than in our own country, whether on a large or small scale? Indeed, we rather believe that the smaller institutions, rightly used, are more advantageous to the student than the larger ones, overcrowded by the classes. What greater facilities for study, private or public, in every part of medicine? Witness the rapid development of every branch within the last few years; what greater incitements to study than the very number of competitors which are annually brought together? We do not object to the finishing of the course of study by a visit to European schools, if the opportunity be offered, for the simple and sole reason that it is well, at any time, to leave home and see men and manners; but to obtain new thoughts, never. There is no necessity, we contend, to leave our country to obtain a medical education. If one can not learn here, neither would it be possible, by any system, to succeed. We may require a preliminary education; we may prolong our sessions; let us do so; they are helps to study; but it rests with the individual at last to develop what naturally belongs to him. The vigor of the American institutions will make a way, if they can not find it, and we may rest assured that the means are as sufficient to advance the science of medicine, as any other science which has rendered so many illustrious in this country in its pursuit.

Solubility of Iodine in Tannin.—Iodine is known to be more soluble in water containing tannin than in pure water. M. Koller has found that to dissolve one gramme (about 15½ grains) in 450 grammes (about 14½ oz. troy) of water, at 120° F., the latter must contain 3.29 grammes (about 50 grains of tannin). By raising the temperature, the proportion of tannin may be diminished. Pure water dissolves more iodine than water containing sugar.

VITAL STATISTICS OF ST. LOUIS.

For the month of November, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	217	Still Born.....	42
White Females.....	129	Under five years of age.....	151
Colored Males.....	18	Between five and twenty years...	80
Colored Females.....	9	Between twenty and forty years...	88
Born in the United States.....	261	Between forty and sixty years....	65
Born in Germany.....	78	Between sixty and eighty years...	87
Born in Ireland.....	64	Bet. eighty and one hundred y'rs	2
Born in other countries.....	12	Total.....	415

DISEASES.

Abscess.....	8	Fever Puerperal.....	5
Accidents.....	2	Fever Continued.....	5
Apoplexy.....	6	Fever Typhoid.....	23
Albuminuria.....	2	Gangrena.....	1
Atrophy.....	6	Gastritis.....	8
Asthma.....	8	Hepatitis.....	2
Bronchitis.....	6	Hemorrhage.....	8
Burns.....	1	Hydrocephalus.....	2
Cancer.....	4	Hydrothorax.....	1
Carditis.....	8	Inflammation.....	5
Cerebritis.....	5	Laryngitis.....	4
Convulsions.....	26	Marasmus.....	7
Congestion of Brain.....	10	Meningitis.....	5
Croup.....	8	Nephritis.....	8
Debility.....	20	Old Age.....	8
Dentition.....	7	Paralysis.....	8
Disease of the Heart.....	2	Peritonitis.....	4
Delirium Tremens.....	1	Phthisis.....	48
Diarrhoea.....	15	Pneumonia.....	32
Diphtheria.....	8	Poison.....	1
Dropsy.....	7	Premature Birth.....	5
Drowned.....	1	Rheumatism.....	1
Dysentery.....	22	Scarlatina.....	8
Enteritis.....	10	Scrofula.....	2
Epilepsy.....	2	Syphilis.....	6
Erysipelas.....	2	Tetanus.....	10
Fever Intermittent.....	5	Trismus.....	8
Fever Remittent.....	4	Ulceration.....	8

Total number of Deaths for the month of November, 1866.....383

Total number of Deaths for the month of November, 1867.....522

Total number of Deaths for the month of November, 1868.....415

THE
St. Louis Medical Reporter,
A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

OSCAR F. POTTER, M. D.

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No. 21.

**ON THE TREATMENT OF STRICTURE OF THE URETHRA BY
THE EMPLOYMENT OF THE "STRICTURE DILATER" OF
BARNARD HOLT, Esq.**

By Jos. C. HUTCHISON, M. D., late President of the Medical Society of the State of New York; Surgeon to the Brooklyn City Hospital; late Professor of Operative Surgery in the Long Island College Hospital.

[Read before the Medical Society of the State of New York.]

The following paper is intended to embrace my experience in the treatment of the stricture of the urethra, by means of *splitting* the stricture, as performed by Mr. Bernard Holt, Surgeon to the Westminster Hospital, London.

Stricture of the urethra is a disease of so serious a nature that any method of treatment which claims pre-eminence, and which experience proves to be prompt, easy, free from danger, immediate or remote, and, at the same time, efficient, deserves our consideration.

Mr. Holt's instrument, which, as you know, consists of two grooved blades, fixed in a handle (equaling in size a No. 3 catheter), and enclosing between them a hollow dissecting rod, open at its ends, which indicates by the escape of urine when the instrument has entered the bladder, and also serves as a guide to a number of tubes which are quickly passed along it, thus forcibly separating the blades and rupturing the stricture. On the morning of the operation, the patient should relieve his bowels by a dose of castor oil, and he must retain his water for two or three hours previously, in order to facilitate the intro-

duction of the dilator, and to permit its free movement in the bladder. The operation is performed in the following manner : Having ascertained that the urethra can be traversed by a No. 3 sound, the dilator is carried into the bladder in the same manner that a lithotrite is introduced for the purpose of crushing a stone. The flow of urine through a hollow directing rod will indicate that the instrument has fairly entered the bladder. The surgeon places the tube, which he has previously selected (which should not be larger than the meatus will easily admit) upon the directing rod, and pushes it rapidly to the end. The dilator should now be rotated, so as to separate still further the sides of the rent, and after a moment or two the instrument is withdrawn, and a catheter the size of the tube is introduced, for the purpose of removing the urine. The catheter is then taken out, and the patient is put to bed, with directions to take 2 grs. of sulphate of quinia and 10 m. of tincture of opium every four hours until six or seven doses are taken. The same catheter, or a smaller one, if the patient complains of much scalding, should be introduced on the second day after the operation, and repeated every other day for a week. The intervals should be gradually increased until it is not necessary to use it oftener than once in three, six or twelve months. A small quantity of blood should be discharged after the rupture ; if this does not take place, it is possible we have merely dilated the stricture, not ruptured it.

The object in keeping the instrument in the urethra a short time after the rupture is to allow the muscular spasm which is excited by the operation to subside ; otherwise we may not be able at once to introduce the catheter to remove the urine. This expedient was suggested by Prof. Macnamara, of the Meath Hospital, Dublin, who informed me that he had practised Holt's operation two hundred and fifty times without an unsatisfactory result. It is important that the stricture should not be dilated beyond No. 3 or 4, in order to insure that it will not be further dilated instead of split by Holt's instrument.

The following cases illustrate the results of the operation under my own observation in the Brooklyn City Hospital.

The first four cases are from the notes of House Surgeon, X. C. Scott, M. D., the remainder from the notes of House Surgeon, E. C. Elbrigg, M. D.

CASE I.—*Stricture of Three Years Duration—Hypertrophy and Contraction of the Bladder.—Occasional Retention of Urine.—Operation.—Death from Gangrene of the Lung six weeks subsequently.*—Andrew Jackson, a sailor, aged 38, entered the Brooklyn City Hospital, for stricture of the urethra, Sept. 9th, 1867. He stated that he had had gonorrhea five or six times; the first attack when he was 15 years old; soon after this he fancied that the stream of urine was diminished in size. His last gonorrhea occurred three years ago, and he has had a gleet discharge ever since; has had retention of urine several times during the last three months, and was relieved each time by the use of opium and the warm bath. For the last two weeks has suffered from intermittent fever; bowels obstinately constipated; passes his urine every half hour or hour.

A sound, introduced into the urethra, encountered a stricture two and a half inches from the meatus, which felt, through the external walls of the canal, like a dense cord constricting it. A No. 3 sound was passed through this, when it reached a second stricture, five and a half inches from the meatus, through which the smallest instrument could not be carried. At the end of a month, by the careful introduction of an instrument (at first, every fourth day, and, subsequently, every day), we succeeded in introducing a No. 1 sound into the bladder, and on the 14th of October a No. 3 was passed with some difficulty, the lower strictures being half an inch in length. At this time a No. 5 could be passed through the first stricture. He had now recovered from intermittent fever and from an attack of ptyalism, which followed the administration of a mercurial cathartic, and on the following day (Oct. 15th) at 12 o'clock, he was removed to the operating theatre, when I passed a No. 3 sound into the bladder. On withdrawing it, I attempted to introduce Holt's dilator, but, notwithstanding the most careful and persistent efforts, could not make it enter the bladder, although it passed into the urethra seven and a half inches—the average length of

the canal in the human subject. I did not then understand why it could not be introduced into the bladder; but being satisfied that it had passed through the strictures, I carried down rapidly a No. 10 tube on the directing rod and ruptured the strictures. The operation was attended with considerable pain and a slight discharge of blood. The instrument was removed, and the urine drawn off with a No. 7 catheter. I now attempted to introduce Holt's instrument again, but failed. He was sent to bed, and ordered to take two grains quinine and ten minims of laudanum every four hours, alternating with one drachm of bicarb. soda every four hours. In the evening his stream of urine was quite large, and he said he felt better than he had done for a year.

On the 16th, thirty hours after the operation, he had a slight chill, with loss of appetite, and pulse 100.

On the evening of the following day (17th), he again felt chilly, and generally uncomfortable; the urine flowed easily, and in a good stream. On account of the crowded condition of the ward which he occupied he was removed to another ward, and through the carelessness of a nurse was placed in full draft of air.

The *left lung* was the seat of pneumonic inflammation. The spleen was large and the kidneys granular. The bladder and penis were removed with great care, and when laid open they presented the following appearances: Two and a half inches from the meatus was found a pretty close annular stricture, which had been dilated by the operation, instead of being ruptured, because it was not sufficiently tight to come within the scope of Holt's instrument. (It will be remembered that it admitted a No. 5 sound). The remains of a second annular stricture, the narrowing being very slight, were found five and a half inches back from the meatus; and traces of a third indurated annular stricture occupied the posterior three-eighths of the spongy portion of the urethra. The induration here extended into the tissues around the mucous membrane, the contraction being most considerable at the centre, so that the affected portion presented a form somewhat resembling the hour

glass. No traces of the rupture could be detected in either of the latter strictures. The middle lobe of the prostate gland was considerably enlarged. This explained why I was unable to introduce Holt's dilator into the bladder, its curve being so slight. Behind the enlarged third lobe, and extending transversely from the orifice of one interior to the other, was a bar-like ridge 3-4 of an inch in length and about two lines in height. The bladder was half an inch in thickness, the hypertrophy being confined chiefly to the cellular coat, and were so much contracted that it would not contain half an ounce of urine.

The specimens were exhibited to the New York Pathological Society.

The striking points of interest in connection with the above case, are: 1st. That the anterior stricture, which was too large to come within the scope of Holt's dilator, and was, therefore, not ruptured, but merely dilated, had contracted to a much greater degree than the posterior strictures, which were ruptured. 2d. Although no instrument was introduced into the bladder after the day of the operation, on account of the intermittent fever, and, subsequently, of the lung disease, of which the patient died, the posterior strictures had contracted to a very slight degree, showing conclusively that contraction does not take place so rapidly after rupture as after dilation. It should be remembered that the constriction was not confined to the mucous membrane of the urethra, but extended to the strictures around it, and hence the narrowing could not have disappeared when the section was made, as would have been the case if the mucous membrane alone was involved. Would it not have been better to have ruptured the anterior stricture, when it would admit only a No. 3 sound, before rupturing the others?

The case proves (3d), that even when it is impossible to introduce a dilator into the bladder, on account of an enlarged third lobe, strictures in the lower urethra may be satisfactorily ruptured, provided the instrument can be carried through them.

CASE II. Thomas Johnston, oysterman, aged 53 years, entered the Hospital, Sept. 3d, 1867, suffering from the effects of a stricture, which he had had for nearly 30 years. Had gonor-

rhea 30 years ago, and soon after his recovery he noticed that his stream of urine was spiral and diminished in size. Has suffered frequently from retention of urine. Has been in the habit of occasionally introducing a bougie made of hickory wood. His scrotum has been enlarged, indurated, and tender to the touch for three months, and the tissues surrounding the urethra are indurated from a point three inches behind the meatus as far back as the prostate gland. His urine is discharged in a very small stream, with great straining. He was ordered eight leeches over the perineum and scrotum, with alkaline drinks, and rest. Ten days after admission an abscess was opened over the left scrotum, which discharged urine, with pus, and closed spontaneously after a few days. One month after admission a No. 1 bougie was passed into the bladder, disclosing the existence of three strictures, one just posterior to the glans, another two and a half inches from the meatus, and a third at the bulb. The strictures were soon dilated so as to admit a No. 4 sound, and on the 14th of October Holt's dilator was carried into the bladder with some difficulty, and the strictures ruptured with a No. 12 tube. The instrument was withdrawn, and the urine removed with a No. 12 catheter. A small quantity of blood was discharged; the patient did not take an anæsthetic, and suffered very little pain. Ten m. laudanum and two grains quinia were given every four hours, alternating with one drachm bicarb. soda every four hours.

On the 17th a No. 12 bougie was passed, and allowed to remain, by some mistake, an hour in the urethra. Soon after its removal the patient was seized with a severe rigor, which lasted exactly 3 1-2 minutes after the hypodermic injection of 5 grs. sulphate quinia. He had no subsequent trouble, and left the Hospital, Oct. 31st, able to introduce a No. 12 bougie himself, and feeling more comfortable than he had done for ten years.

Jan. 28th, 1868. Saw Johnson to-day. He says that his stream is large, and that he introduces a No. 12 bougie now and then without any difficulty. His general health has improved, and the hardness along the urethra is disappearing.

CASE III. Joseph Hildreth, a sailor, aged 22 years, entered

the Hospital, July 22d, for gonorrhea and constitutional syphilis. He stated that he had had clap five times, the present attack having commenced one month since. Had chancre one year ago, and is now suffering from secondary eruption. After his recovery from gonorrhea he noticed that the size of his stream of urine was diminished, and it was discharged with some difficulty. He can not state when symptoms of stricture first manifested themselves.

A sound was introduced into his urethra on the 22d of Oct., and a stricture found at the bulb through which a No. 5 could be passed. Anæsthesia was produced at his request, when Holt's dilator was carried into the bladder without difficulty, and the stricture ruptured with a No. 12 tube. A slight discharge of blood took place, showing that though the stricture admitted a No. 5 sound, it had been ruptured, not dilated. He was put to bed and directed to take quinia with tinct. opium and bicarb. soda, as in former cases.

Oct. 23d. Had a chill, which was promptly checked by the hypodermic injection of 5 grains quinia. He suffered no further inconvenience from his stricture, and remained in the Hospital on account of syphilis until Nov. 7th, when he was discharged, well and able to introduce a No. 12 sound.

CASE IV. *Retention of Urine from Organic Strictures, which had Existed for 10 Years.*—James Dailey, sailor, aged 35 years, entered the Hospital, Oct. 24th, suffering severely from retention of urine. He had gonorrhea ten years ago, and soon after noticed that his stream of urine was twisted and diminished in size. The difficulty gradually increased, and one year ago he had an attack of retention of urine, which was relieved by a hot bath. Three days ago he suffered from a second attack of retention, and was relieved by means of a catheter, introduced by a New York surgeon. For the last 48 hours he had passed no urine, his bladder was greatly distended, and he was continually striving to evacuate it, which caused him great agony. The House Surgeon, Dr. X. C. Scott, put him under the influence of chloroform, and succeeded, with considerable difficulty, in introducing into the bladder a No. 1 catheter, through three stric-

tures, situated at the bulbous and membranous portions of the urethra. After the urine was discharged a No. 2 and then a No. 3 instrument were carried into the bladder, followed by Holt's dilator, and the strictures were split by a No. 11 tube, which caused a slight discharge of blood. The patient was kept in bed 24 hours, and took the laudanum and quinia mixture and soda. On the following day he walked about the wards, feeling very well, and suffered no further inconvenience. A bougie was occasionally introduced, and he left the Hospital, Nov. 16th, having been instructed to pass the instrument at gradually increasing intervals.

CASE 5. Wm. Andrews, born in England, aged 23, sailor, was admitted to Hospital on the 9th of December, 1867, with an impassable stricture.

Patient had had gonorrhea twice, to wit: seven years, and again four years prior to admission. From the time of the last attack of gonorrhea, he had gleet, with repeated gonorrheal exacerbations. Had noticed a gradual decrease in the size of the stream of water for the same length of time. At the time of admission, complained of very frequent and painful micturition, the size of the stream being very small. Urine, examined microscopically, was normal in character. General health not deteriorated. Examination of urethra, by means of sounds and bougies, showed an impassable stricture 3 1-2 inches from the meatus.

Treatment.—Daily attempts to dilate the stricture by means of bougies—a No. 3, with conical point, being found the most efficient; warm baths; alkali (sodæ bicarbonas) in ʒj doses, three times a day.

January 2d. Succeeded in passing the stricture with a No. 3 bougie; the stricture was ascertained to be 2 inches in length. The bougie was retained in the urethra for three hours, when it was withdrawn, and Holt's dilator forthwith introduced, and the strictures ruptured. After the withdrawal of the dilator the urine was drawn off with a full sized catheter, and the patient confined to his bed for 24 hours, and the tincture opii, and the quina sulph. administered respectively in 10 m and 2 gr.

doses, every 4 hours, and the bicarb. of soda in 3j doses likewise every 4 hours.

January 3d. Patient was quite well; complained of ardor urinæ; passed again a full sized catheter, which caused much pain to the patient; discontinued the opium and quinia, and continued the alkali three times a day. From this time forth the catheter was introduced at a gradually increased interval of time, until his discharge from the Hospital.

January 18th. Discharged cured, with instructions to pass a proper sound from time to time.

CASE VI. Charles Stratton, sailor, born in Scotland, aged 31, was admitted October 11th, into the medical department with intermittent fever, complaining of difficulty in micturition. An examination was instituted, and two strictures found, one beginning at the meatus, and extending one inch inwards, due, probably, to cicatrization of a chancre, which he had had in that situation six years previously; the other at the bulbous portion. Patient had had gonorrhea twelve years ago. He dated the beginning of the stricture from four years ago. It was found impossible to pass a larger sound than a No. 1. A few days after an abscess was formed in the perineum to the left of the raphi, probably in consequence of the irritation of the instruments. The abscess being opened, was found not to communicate with the urethra. The patient was transferred to the surgical side on the 3d of December. The abscess, instead of healing, showed a tendency to enlarge, discharging constantly an abundance of unhealthy pus. The patient, being very feeble, was put on the ferri et quinae citras and a nourishing diet. After his condition had been improved, flexible bougies were cautiously used, with a view of dilating the strictures to the size of a No. 3 sound, to enable the use of Holt's dilator.

January 7th. The strictures having been sufficiently dilated, and the patient being in good condition, Holt's instrument was used by House Surgeon Knox, without anæsthesia, rupturing the stricture to the extent of being able to introduce a full sized catheter. The usual after treatment was prescribed.

January 8th. Had a good night's rest; passed a good stream of water. The catheter was used again, which entered without much difficulty. Had an abundant discharge of pus from the urethra. In the course of the day the symptoms of urethral fever supervened, viz.: rigors, followed by fever, persistent vomiting, anorexia, vertigo, &c. Ordered, in addition to the opium and quinia, the sulphate of soda in 20 gr. doses ever two hours.

January 9th. The fever has subsided, but suffers much from prostration; passed the catheter with facility.

Jan. 20th. Patient doing well, the abscess closing up rapidly; the only local treatment being the use of carbolic acid and linseed oil.

CASE VII. *Stricture, supposed to have been Dilated, instead of Ruptured.*—Franklin Ryan, aged 28, sailor, born in the United States, admitted January 7th, 1868. Patient had had gonorrhea repeatedly—the last time two years previous; had noticed a gradual diminution in the size of the stream for one year last past. Complained at the time of his admission of frequent micturition, and of a sediment in his urine, visible towards the end of the act of micturition. A microscopical examination showed the sediment to consist of the triple phosphates—no pus found. Examination, by means of a sound and a *bougie a boule* was made, and a stricture at the bulbous portion, one inch in length, was found, admitting no larger sound than No. 3.

January 12th. Dr. Elbrigg, House Surgeon, introduced Holt's instrument, the patient not being under the influence of an anæsthetic, and passed the largest tube, with the effect of dilating without rupturing, not a drop of blood coming from the urethra after the withdrawal of the instrument. A full sized catheter was introduced and the urine drawn off.

The patient was subsequently treated in the usual mode, viz.: tinct. opii, quinia and alkali, and confinement to bed for 12 hours.

January 13th. The patient has had no symptoms of urethral fever; full sized catheter again used without causing much pain.

The patient is still an inmate of the Hospital, on account of porigi furosa.

The above eight cases comprise my whole experience in the treatment of strictures of the urethra, by Holt's method. The number is too small to enable me to pronounce unequivocally in its favor, but the results are sufficiently satisfactory to encourage a continuance of the practice. So far as they go they are eminently satisfactory. With one exception (No. 2) the patients were sailors, and I fear I shall not have an opportunity of following their subsequent histories. Case No. 2 was examined three months after the operation, and was found to be in an entirely satisfactory condition.

Basing an opinion of the operation on the experience detailed above, I am led to claim for it the following advantages over the other methods of treatment ordinarily practised.

1st. *It is preferable to gradual dilatation*, because the urethra is enlarged at once, so as to admit a catheter of full size, and the patient is spared the prolonged suffering and loss of time incident to gradual dilatation. In practicing dilatation, moreover, we are often unable to increase the size of the instrument, and in some cases the highly irritable condition of the urethra forbids the use of dilatation at all. Case 1 illustrates, also, that contraction does not take place so soon after rupture as after dilatation.

2d. *It is preferable to internal urethrotomy.* (a) By the latter operation a healthy portion of the urethra may be divided, and thus give rise to urinary infiltration and abscess. The floor of the urethra is undoubtedly the most frequent seat of disease; but there are numerous specimens in the anatomical museums showing exceptions to this rule. If, in a given case of stricture, the disease did not extend to the under part of the urethra, the incision would be made into healthy tissues, and urinary infiltration would result. I have seen an example of this accident following internal incision at the bulb. But are we sure that the rupture is limited to the extent of the obstruction? It is, I believe, legitimate to infer, that diseased tissue would be more likely to yield than a healthy part. Experience on this point is limited, so far as I know, to a single case, recorded by Mr.

Holt.* A man who was the subject of strictures died of fever. After death Mr. H. ruptured them with his dilator, and on laying open the urethra, "the strictures were found to be split at the under portion of the canal, the rent being directly in the median line, and limited to the extent of the obstruction." In my case (No. 1) the parts were healed, so that it was impossible to determine the extent of the rupture.

(b) We would expect contraction to take place more closely after a rent than after an incised wound with its edges approximated.

3d. *It is better than external urethrotomy, or "Syme's operation,"* and is applicable to the same class of cases. It is less dangerous, more simple, does not necessitate long confinement, nor require that a catheter should be retained in the bladder—a consideration of no small importance. In short, the operation may be classed among the minor operations of surgery, and can be performed by any one capable of introducing a sound through a difficult stricture. Each of the three House Surgeons who operated on three of the cases which I have reported, have been residents in the Hospital less than a year. I can see no reason why it may not be practised in every case of stricture where the dilator can be introduced into the bladder. Even if it should not accomplish all that is claimed for it, it will, I am sure, prove a valuable addition to our resources in the treatment of this disease. Every surgeon of experience must agree with Sir Henry Thompson, "That no one method can be successfully applied to all varieties of the complaint which a large field of practice produces. We can not possess too many resources. We shall be unwise to deny ourselves the right to select with discrimination for each case its appropriate remedy."

P. S. Since writing the above paper, I have repeated Holt's operation twelve times, making a total of twenty cases treated by this method, all of which have resulted satisfactorily.

J. C. H.

*Holt on Stricture, Vol. II, p. 103.

ON SOME OF THE MEDICINAL USES OF PERMANGANATE OF POTASH.

By E. MONTGOMERY, M. D., President of the St. Louis Medical Society.

Editor St. Louis Medical Reporter :

DEAR SIR: Will you kindly permit me to call the attention of the profession, through the columns of your journal, to some of the remedial virtues of the Permanganate of Potash? Some six or eight months ago, I published my experiments with this chemical in a variety of diseases, and since that time I have been using it quite extensively, and, I am gratified to say, with very satisfactory results; and as I am always willing to impart to my brother practitioners any successful remedy, or any improvement in therapeutics which I may have tested by practical experience, I offer the following remarks to your readers, so that they may try the remedy in any cases which they may deem suitable:

In spermatorrhea and chronic gonorrhea, I have used the permanganate, both generally and topically, with very excellent effects; in the former disease, I smear a bogie with an ointment made with one grain of the salt to one drachm of lard, and introduce it fairly into the bladder once a day; the ointment should always be used immediately after being prepared. At the same time I apply a strong aqueous solution (one drachm to the ounce) along the dorsum of the penis. If the subject is at all robust, I also give it internally, half a grain in a wineglass of water three times a day. In chronic gonorrhea I also give it internally, and at the same time apply it as an ointment, by means of the bougie, or as an injection, about two grains to the ounce. I would here remark, that, in using this medicine, we must always remember that it is exceedingly delicate in its reaction with other substances, very easily decomposed, and should always be freshly prepared for immediate use, as its solution will soon deteriorate; the water in which it is dissolved should also be pure, or it may be rendered inert. In injecting it into the bladder, in cases of cystitis, catarrhus vesicae, &c., the organ should be well washed out with pure tepid water before introducing the permanganate. In cases of gleet, the application of

the remedy, by the bougie and by injection, will be found a prompt and efficient means of cure. As a topical application, in many cases of fluor albus, I can not speak too highly of its virtues; of course, in cases where the leucorrhea depends on displacement or structural lesion of the uterus, no local remedy can be expected to effect a radical cure, but even in the worst cases it will do good, if freely and perseveringly used. When about to apply it to the os and cervix uteri, and to the vagini, the parts should be first thoroughly cleansed, swabbing and syringing them well with warm water; a strong solution should then be painted over the parts with a brush, and no oil or glycerine afterwards used. We know that it is very common to resort to glycerine immediately after the application of chromic acid, iodine, nitrate of silver, or carbolic acid; but as glycerine decomposes permanganate of potash, these two agents should not be applied simultaneously. I have such confidence in the remedy in vaginitis, urethritis, cystitis, &c., that I verily believe, if vigorously persisted in, it would cure most cases of vaginismus, and thus supercede that severe and repulsive operation of Dr. Sims. I have quite recently treated a woman who had a complicated case of long standing—vaginitis, uthritis and cystitis combined—whose agony from dysuria, painful micturition, vaginismus, and a most excruciating distress in the regions of the ovaries, was so constant and intense that her physician had to resort to large doses of opiates to make her existence at all endurable. When I first saw her she was taking morphine in grain doses, besides ext. hyosciami, belladonna or cannabis indica alternately; she had also used the proto-iodide of mercury, alkalies, salines and demulcents; with hot hip baths, anodyne and emollient injections, and hot fomentations. Yet, with all these judicious measures, she expressed her sufferings as being intolerable; and, although under the influence of anodynes, I was compelled to put her under the effects of chloroform before I could make a satisfactory examination of the parts, or apply the first two injections of the permanganate of potash. In this case, I painted the whole vaginal walls with a strong solution—two scruples to the ounce of water—and in-

jected a weak solution into the bladder. I also inserted into the canal of the cervix uteri a portion of the strong solution, as the os uteri was patulous, and a purulent looking secretion appeared to be oozing from it. For a short time I gave this patient a combination of mercurials and anodynes at night, with alkalies and demulcents during the day, and soon had the satisfaction of seeing her so well and entirely free from all her suffering that I dismissed the case, with the recommendation to take half a drachm of the ferri et potassa tart. three times a day for two or three weeks.

In cases of cystitis, I inject the bladder two or three times with three or four ounces of pure tepid water, before inserting the permanganate of potash. I first use a weak injection of this, say four grains of the crystal to four ounces of tepid water, and afterwards increase the strength until the desired result is obtained. The injections I allow to remain about five minutes, and never use any morphine after them; indeed, I invariably find that although the solution may cause a considerable degree of pain at the moment, a local anæsthesia very soon succeeds, and the irritability and tenderness of the parts rapidly diminish. As before intimated, the preparations of this salt should always be made *immediately* before using, and care should be taken that the crystals should be thoroughly dissolved, as a crystallized lump, getting into the bladder, or lodging in the uterus or urethra, would cause a severe amount of uneasiness. In injecting the bladder I insert a wide catheter, and into that the nozzle of an India rubber bag, such as is used for injecting a hydrocele. The same appliances may be used in injecting the womb, only that I generally use a gum elastic catheter for the latter organ. I would here say, that in my hands, I have never yet witnessed any unpleasant result from using the solution of this salt, in either uterine or vesical injections. By rolling a silk thread around the end of the uterine sound, a concentrated solution may be applied to the canal of the cervix, and the same strong solution may be freely applied to any erosions or ulcers about the os or cervix with perfect safety.

I will not now dwell on the remedial virtues of this salt in ill-

conditioned ulcers, foul sores, abscesses, boils, &c., as they have been well known to the profession for a number of years; but in the cases affecting the urinary and generative organs, I think the paramount efficiency of this valuable agent is not as well known or recognized as it deserves and justly merits.

Hoping that these few hints may be the means of directing some of the readers of the *MEDICAL REPORTER* to use a remedy which may give prompt relief to some suffering patient, is the fond desire of

Your sincere friend,

E. MONTGOMERY, M. D.

ON VAGINISMUS.

By Dr. VICTOR REVILLOUT.

The name of *vaginismus* has been given to excessive contraction of the vaginal orifice, which is due to a morbid condition of the constrictor muscle, and forms an obstacle to coition, or renders it very painful. It has been attributed to a certain condition, and not to an action of the muscle, as it will be seen that the contraction may, in certain cases, be passive.

A young woman, a domestic servant, presented herself to Dr. Richet in order to be treated for this affection. The circumstances under which this contracted state of the vagina had become a source of suffering were not mentioned, but it was probably due to an inflamed vulva, produced by unsuccessful attempts at coition.

On separating the labia magna the meatus urinarius was perceived to be red and inflamed; the vaginal orifice, turned towards the right side, admitted with difficulty a female catheter. All these parts were the seat of intense pain, and when attempts were made to introduce the point of the little finger, the patient seemed to suffer very acutely.

The local irritation, which was probably traumatic, having been relieved, Dr. Richet performed dilatation by means of a bivalve speculum, introduced when closed, and withdrawn opened. Pads were then placed in the vagina. By this treat-

ment the patient was perfectly cured ; the traces of small lacerations caused by the speculum remained ; the index finger could be introduced without giving pain, and was not even grasped by the orifice.

It must not be supposed that every case of vaginismus is so simple as that reported by Dr. Richet. In this patient coition had not taken place, and the obstacle was due to an exaggeration of the physiological resistance offered by the tissues, to a tonicity of the constrictor muscle. When this is the case, the most simple and efficacious treatment is evidently that of dilatation. When once the sphincter is fully dilated, the passage remains open, as in its normal condition with married women.

M. Debout proposed to operate according to the method carried out by M. Recamier in cases of fissure of the annus : to place the patient under the influence of chloroform, and to overcome the resistance with the two hands. M. Richet's proceeding amounts to the same thing, except that the dilation is measured and limited by the amount of separation given to the valves of the speculum. In Great Britain, Dr. Churchill prefers slow dilation by a sound or speculum, which is allowed to remain, and the dimensions of which are gradually measured.

But all these means are inefficient when the vaginismus is no longer physiological, so to speak, but rather, properly speaking, pathological. As, for example, when it occurs in married women, who have borne coition for a long time without suffering; or even in women who, after several pregnancies, have arrived at the change of life. Cases of this kind are not extremely rare, and have been reported by Dr. Marion Sims, M. Courty, and others.

Vaginismus is then no longer due to normal tonicity, but to spasm or chronic contraction, and very frequently results from a reflex action, and is the consequence of pain caused by the contact of some foreign body. This pain may be neuralgic.

Dr. Marion Sims has discovered in many patients, every part of whose genitals seemed to be perfectly healthy, that there was excessive hyperæsthesia of the external surface of the hymen, and that it was necessary to remove the whole of this

membrane before dilating, in order to relieve the contraction. In some cases where the hymen did not exist, the *debris* of this membrane were the seat of a morbid sensibility, and these were removed by Dr. Sims.

In many instances the pain is not simple neuralgic, but rather inflammatory or mixed. Granular inflammation of the vaginal mucous membrane, or of the neck of the uterus, or some ulceration of this latter part, &c.; or briefly, those alterations which in the majority of females pass almost unperceived, occasion among some the most distressing and obstinate vaginismus.

Generally, in cases of this kind, anæsthesia from chloroform or ether removes the vaginismus for the moment, because it removes the abnormal sensibility, and the reflex action of which it is the consequence. The same thing then happens as when patients, affected with false anchylosis, are put under the influence of chloroform. The contraction of the muscles ceases, and the vagina may be distended, as limbs previously immovable may be put into action during anæsthesia. When the sensations return, muscular spasms and active contractions are re-produced.

In cases of inflammation, as of neuralgia, this effect of anæsthesia may be produced when the contraction is active and reflex. If the muscle itself be affected and the contraction be passive, as often occurs in muscles previously paralyzed or actively contracted, it will not manifestly cease during the sleep of chloroform. Anæsthesia, however, will facilitate the examination by permitting the forcible introduction and separation of the speculum, and removing the fear of causing acute pain.

When any lesion exists and is revealed by the speculum, the cure of this often suffices for the cure of the vaginismus.—*Gazette des Hôpitaux and Ranking Abstract.*

THE ACARUS SACCHARI OR SUGAR INSECT.

The *Acarus sacchari* or *sugar insect*, is a formidably organized, exceedingly lively, and decidedly ugly little animal. From its oval-shaped body stretches forth a proboscis terminating in a kind of scissors, with which it seizes upon its food. Its organs of locomotion consists of eight legs, each jointed and furnished at its extremity with a hook. In the sugar its movements from one place to another are necessarily very slow, but when placed on a perfectly clean and dry surface, it moves along with great rapidity. It has been stated that the *Acarus scabiei*, or itch insect, possesses the power of leaping, but all my attempts to induce the *Acarus sacchari* to make a jump, failed, although it was placed in the most favorable positions for the performance of such a feat.

The disease termed *psora*, or *scabies*, by medical men, but more popularly known by the expressive designation of the "itch," is, I venture to hope, only known by name to my readers. It is, I admit, not a nice theme to discourse upon, more especially in connection with such a subject as sugar; but, as this malady and its cause are intimately connected with my objection to the use of raw sugar as food, I can not avoid—even at the risk of offending the sensibilities of some of my readers—alluding to them. So early as the twelfth century, an Arabian physician, named Abinzoar, observed that a skin disease was produced by the ravages of little insects. They burrowed, he says, beneath the skin of the hands, legs and feet, and produced pustules, containing fluid. From the description of these insects given by Abinzoar, it is quite evident that they were not "little lice," as he terms them, but species of mite, or *Acarus*. The same kind of insect was noticed some centuries afterward by many distinguished physicians and naturalists, one of whom, named Bonomo, described it by the aid of a drawing, in the year 1683. The itch, then, is proved to be produced by this *Acarus* making burrows beneath the skin, and depositing therein its eggs; and hence the insect has been named the *Acarus scabiei*, or scab mite. Mange in horses, cattle and dogs, and

scab in sheep, are essentially the same disease as itch in man. As a general rule, the persons most liable to be preyed upon by the *Acarus scabiei* belong to the lower classes—in fact, are members of the “great unwashed” family. The disease is very rare among the middle and upper ranks, and, indeed, wherever the abundant use of soap and of clean linen prevails. Now, it is a noteworthy fact, that grocers’ assistants and sugar warehouse men are peculiarly liable to a kind of itch which effects their hands and wrists, but does not extend to any other part. These persons are usually of cleanly habits, and do not belong to the classes among whom the ordinary itch is so prevalent; there is, therefore, but one way of accounting for their tendency to contract that disease—namely, that the *Acarus sacchari*, having, like its congener, the *Acarus scabiei*, burrowing propensities, bores into their skin, and breeds there. The two kinds of Acari resemble each other very closely, but the sugar insect appears to be the larger and more formidable. So common is this pustulous disease among persons engaged in the “handling” of sugar, that it has been termed the “grocer’s itch;” but I doubt very much that it differs in any specific respect from the ordinary variety of that nasty complaint.

The number of Acari found in raw sugar is sometimes exceedingly great, and, in no instance, is the article quite free from either the insects or their ova (eggs). Dr. Hassall, (who was the first to notice their general occurrence in the raw sugar sold in London), found them in a living state in no fewer than 69 out of 72 samples. He did not detect them in a single specimen of refined sugar. The results of my examination of the sugar sold in Dublin, coincided pretty closely with Dr. Hassall’s experience. In the refined sorts I found nothing but crystallizable and non-crystallizable sugar, and a little saline matter; in the raw kinds, organic and mineral filth—often in abundance. One of the samples which I examined contained a larger number of insects than I believe had previously been noticed, or, at least, recorded, by any other observer. It was sent to me, together with other articles, in May (1863), by Mr. Horner, the master of the South Dublin Union Workhouse, and the following is the re-

port which I made upon it: I have rarely examined a more inferior sample of sugar; it is extremely damp, contains a very large proportion of treacle, and a considerable amount of such impurities as sporules of fungus, particles of cane, albumen, and starch granules. These substances, however, though greatly detracting from the value of the sugar, are not injurious to the health. I can not say as much for another impurity which exists in great abundance in this sample—namely, a species of *Acarus*, closely resembling in appearance and nature the insect which, by burrowing into the skin, produces the itch. It is no exaggeration to affirm that there can not be less than 100,000 of these insects in every pound of this sugar. In ten grains weight I estimated no fewer than 500, most of which were so large as to be distinctly visible to the naked eye. It is inconceivable that thousands of these creatures can be introduced into the stomach of a human being without serious endangerment to health. But not only is such sugar as this sample detrimental to health, it is also the least economical kind which can be employed. It greatly impairs the flavor of tea and coffee; and its high proportion of water and other useless ingredients, lowers its sweetening power to an extent which even its low price fails to compensate for. Many persons believe that coarse brown sugar sweetens better, or, to use the common phrase, “goes further,” than white sugar; but that is a mistake. A teaspoonful of damp brown sugar will certainly sweeten a larger quantity of fluid than a spoonful of white sugar; but it does so because it is much heavier than the latter; but if equal weights be used, it will be found that the white variety is by far the better sweetener. *The kind of sugar which is both healthful and economical, is the dry, large grained, and light colored variety.*—Prof. Cameron, Dublin.

QUININE ALE.—The British *Medical Journal* notices with favor the introduction of a new tonic, wherein England's favorite beverage is made to do service in a medical way. The innovation consists in introducing one grain of quinine in an imperial pint of ale, the additional bitter element being considered a decided improvement.

IODINE AN ANTIDOTE TO STRYCHNINE; AND ON THE IMPROPRIETY OF PRESCRIBING QUININE OR STRYCHNINE IN COMBINATION WITH TINCTURE OF IODINE.

By HENRY WILLIAM FULLER, M. D.,

In the course of my practice it has often occurred to me to prescribe a mixture containing quinine or strychnine, together with tincture of iodine. No chemist to whom I have spoken on the subject, has been aware of any incongruity in the mixture, and few have reported any difficulty in dispensing it. Last summer, however, Messrs. Twinberrow called my attention to the fact, that it is impossible to dispense a mixture containing quinine and tincture of iodine, without an immediate deposit of an insoluble iodide of quinine, which is precipitated, according to the degree of concentration of the mixture, and to the sequence in which the ingredients are mixed, either as a fine brown powder, or in large flakes of a dark brown color. More recently, while seeing a patient, in consultation with Dr. Williamson, of Mildmay Park, I suggested the administration of a mixture containing a drachm of the liquor strychniæ, two drachms of dilute hydrochloric acid, and two drachms of tinctura iodini. Mr. Young, the chemist of Ball's Pond Road, to whom the prescription was sent, observed that a dark flaky precipitate was formed on the addition of the tincture of iodine, and wrote to me saying, "In whatever sequence the ingredients are mixed, I find that the whole of the strychnine is precipitated by the tinctura iodi; indeed, so strong is the affinity between these two ingredients, that the two fluid drachms of tinctura iodi are capable of decomposing six fluid drachms of the liquor strychniæ, producing an insoluble compound of iodine and strychnine."

With a view to test the accuracy of this statement, I have repeated Mr. Young's experiment, and I find it in every respect strictly correct. If one drachm of tinctura iodi be added to a solution of three drachms of liquor strychniæ in four ounces of water, the mixture speedily becomes colorless, and almost loses its bitterness, and, at the same time, a dark brown, flaky precipitate of iodide of strychniæ takes place. The addition of iodide

of potassium, or of a large quantity of spirit, will not serve to prevent the precipitation.

Now, it is obvious that, for medical purposes, a mixture in which such a precipitate occurs, must be almost valueless. The patient not only loses the benefit of the quinine or strychnine, but the iodine also. It is not unreasonable, therefore, to lay down as a rule, that tincture of iodine ought not to be prescribed in a mixture containing either of the above named alkaloids. Probably a similar reaction would take place with other alkaloids, but of those I have no experience.

Another question of practical importance arises out of this observation: May not a dilution of iodine be advantageously given as an antidote in cases of poisoning by strychnine? Neither in Dr. Taylor's work on poisons, nor in any work which I have had the opportunity of consulting, do I find the slightest reference to iodine as an antidote to strychnine; but if a drachm of the tincture of iodine of the pharmacopœia suffices to precipitate and render insoluble no less than a grain and a half of strychnine (three drachms of the liquor strychniæ), it is difficult to resist the conclusion that, if cautiously administered, iodine may prove a valuable and efficient remedy in cases of poisoning by strychnine.—*Lancet*.

OBSERVATIONS ON THE EARLY TREATMENT OF INSANITY.

By HENRY MAUDSLEY, M. D., London, Physician to the West London Hospital; Lecturer on Insanity in St. Mary's Hospital Medical School.

There can be no question, the author thinks, that an attack of insanity may, in some instances, be positively arrested at its outset by judicious treatment. He has seen several cases in which a seemingly imminent outbreak of severe melancholia has been warded off, and the patient restored to tranquility and health of mind, by the judicious use of opium. Indeed, in that state of mental hyperæsthesia which so often precedes an outbreak of insanity, when the mental tone is so changed that every impression is painful, every thought a fear, and every feeling a despair, the

remedial virtues of opium, Dr. Maudsley says, can scarcely be exaggerated.

The following case of hysterical mania may serve as an illustration, not only of the benefit of early treatment in insanity, but of the advantages which a particular method of treatment sometimes offers in private practice, where there are not the means and appliances which are available in an asylum. On one occasion Dr. Maudsley was called hastily in the middle of the night to see a young woman, aged twenty, who had suddenly become acutely maniacal, and whose frenzy of word and action, upsetting the household, baffled the resources of the medical attendant. After feeling a great craving for a glass of beer, which she had been obliged to gratify, she had gone to bed suffering, as was not unusual with her, from windy eructations; but no sooner had she got to her bed than she broke out in a maniacal frenzy, screaming loudly, raving incoherently, and tearing her night-dress and bed-clothes to rags. It had been found impossible to administer any medicine to her, or in any way to tranquillize her; a basin of mustard and water, in which an attempt had been made to put her feet, she had kicked over. Dr. Maudsley found her in a state of acute excitement, with dishevelled hair and wildly staring eyes, restlessly staring from place to place, particularly if any one attempted to touch her, talking all the while rapidly and incoherently, and evidently not knowing those who were about her. Under Dr. Maudsley's instructions, a skilful attendant proceeded at once to pack her in a wet sheet after the hydropathic fashion. This was done without much trouble; a cloth dipped in cold water was applied to her forehead, and a drachm of the tincture of henbane was given to the patient, who soon afterward fell asleep. The sheet was removed after an hour and a half, dipped again in water, and reapplied for an hour and a half more. When Dr. Maudsley visited the patient in the morning, all excitement was gone, and though the mind was confused, and evidently in a state of unstable equilibrium, yet she was conscious, and answered rationally, though quite unaware that she had seen him in the night. From this time recovery went steadily on, and in a few days she was quite restored.

The advantages of packing in the wet sheet in such a case, are these: In the first place, the wet sheet seems to exercise a positive soothing influence, so that a patient will sometimes go to sleep in it when nothing more is done. Secondly, by keeping the patient perforce quiet, without the necessity of a struggle, it not only enables us to give the requisite food and medicine much more easily than could otherwise be done, but it favors the action of the sedative that may be administered. Had the henbane been given to the patient, and nothing more been done, it is more than probable that the dose would have had no appreciable effect upon her excitement. As it was, however, the system was prevented from resisting its action, and the sedative took instant and excellent effect. Thirdly, if packing in the wet sheet carry with it no further advantage, it is a useful expedient for temporarily restraining a maniacal patient where there are not the appliances for treatment which an asylum possesses, and where the practitioner's difficulty of acting immediately and usefully is so great.

"The packing in the wet sheet," the author states, "should not be continued for more than three hours, and during that time the sheet should be removed once, wetted, and reapplied. Thus its application has the character of a remedial means, and is not abused for purposes of mechanical restraint.

"A few words more touching treatment. Had the wet sheet not been used, what means would have suggested themselves as most desirable for adoption? Certainly not opium. It seldom does good in acute mania, especially in young persons, if it ever does real and lasting good in any case of mania. Probably an effectual emetic to begin with, followed by a regular administration of bromide of potassium, and tincture of henbane, would have been as successful as the measures that were actually employed in the case. Notwithstanding the opinion of Dr. Handfield Jones, who has recently advocated the regular use of tartar emetic in certain cases of mania, I should not be tempted to employ so uncertain and doubtful a means of stifling maniacal delirium. To my mind, there is grave reason to suspect that the administration of antimony in doses large enough to stop the raving of insanity, favors the lapse of the disease into dementia. Dr. Jones' theory

of its action as a tissue sedative, lessening the nutritive activity of the part, so that the altered vital actions go on more slowly, is not inconsistent with that suspicion. There is no reason, so far as I know, to allege that the action of the drug is limited to the particular elements of tissue that have taken on a morbid activity; and if the drug manifests no such elective affinity, but affects all the tissue elements of the body, it is difficult to perceive the foundation of the theory of its assumed virtue. It is surely desirably that the vitality of the parts in the neighborhood of a morbid center, or a morbid area of tissue, should not be lowered; a thoroughly sound vitality not only presenting the most effectual barrier against the encroachment of disease, but exerting the best influence in bringing back to their natural allegiance the recalcitrant or revolutionary elements. What advantage is gained by reducing the power of authority and of sound citizenship in order to reduce in equal degree the force of the riotous members of the community? It is with the individual element of tissue as it is with the individual man; let the surroundings be of the best kind, and they will not fail to exert their beneficial influence."—*Medical Times and Gazette*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

MIND IN NATURE; OR, THE ORIGIN OF LIFE AND THE MODE OF THE DEVELOPMENT OF ANIMALS By HENRY JAMES CLARK, A. B., R. S., Adjunct Professor of Zoology in Harvard University. Elegantly illustrated with over two hundred Engravings on wood. 1 vol., 8vo, pp. 822. Tinted paper. Cloth, \$4.00. New York; D. Appleton & Co.

This book comprises the substance of a course of lectures delivered by the author at the Lowell Institute in Boston, in 1864. To these lectures a large amount of material has now been added, and the whole arranged in such form as to present a continuous treatise. A large part of the facts and studies here adduced are original with the author, and much valuable information, not to be found in any other scientific works, is here for the first time brought forward. The book is justly esteemed a most valuable contribution to the scientific literature of the day.

It is divided into three parts. Part first is devoted to the

origin of life, showing the old and the new development theory, together with some interesting facts on spontaneous generation; the origin of individuals by budding and self division; the regeneration of living organism after partial destruction; the persistency of vitality during decomposition; animals primarily created in an adult state; all animals alike in the earliest stages; man and monad are at one time a mere drop of fluid.

Part second is devoted to the five great animal groups—the protozoa, the zoöphyta, the mollusca, the articulata and the vertebrata; showing the peculiar nature of these ideal types, the distinction between animals and plants, the distinctness of the five grand divisions, and the transitions among the subordinate types of the five grand divisions.

Part third is devoted to explaining that the mode of development of animals corresponds with the type of the grand division to which each one severally belongs.

We feel that we can not set forth the nature of this great work better than by thus enumerating some of the principal subjects treated on. It is in every respect a most interesting production, and on a subject which has occupied the minds of physiologists and students of natural history to a considerable extent of late years, and to whom the work is especially valuable.

OUTLINES OF PHYSIOLOGY, HUMAN AND COMPARATIVE. By JOHN MARSHALL, F.R.S., Professor of Surgery in University College, London; Surgeon to the University Hospital, etc., etc. With additions by Francis Gurney Smith, M.D., Professor of the Institutes of Medicine in the University of Pennsylvania, &c. With numerous illustrations. In one large and handsome octavo volume, of about 1,000 pages. Philadelphia: Henry C. Lea. 1868.

This is a most excellent work, and is what can be said of but few works on the subject, fully up to the present stage of physiological science. Many of our old works on physiology have come out with new editions, which, however, on comparing with the previous editions, are found to be the same, word for word, and this on a subject like physiology, which is advancing rapidly, is unjust. We can, therefore, fully agree with the American editor, in saying: "It is no disparagement to the many excellent treatise on physiology, both at home and abroad, to say that, in some respects, this one is better adapted for gen-

eral use as a text book". It is compendious, and yet abounds in all the more recent views and discoveries; and it presents, in connection with human physiology, a brief sketch of each function as it appears in the lower orders. In tracing the progress from general to special physiology, Mr. Marshall has shown himself fully awake to the requirements of the student, and has thus removed one of the great difficulties in the comprehension of the subject. The plan of the work has been designed with the special view to its utility as an educational text book, the subjects being explained in it in a particular order and manner, and the science of physiology treated as dependent on those of anatomy, chemistry and physics. Mr. Marshall commences with a short description of the human body, its cavities, and the organs which they contain. Attention is next drawn to the textures or tissues of which the several organs of the body are composed. The relations of man with external nature is considered, including a sketch of the animal kingdom to which man belongs, and of the types and laws of form which it presents. To this is added a comparison of the animal with the vegetable kingdom, and of both these organic kingdoms with the inorganic kingdom. Then the functions of life are explained, and the process of digestion, absorption, nutrition, secretion, excretion, respiration and the circulation of the blood are concisely, yet plainly, placed before the student. Animal heat, light and electricity, and their dependences on vita-chemical action, animal statics and dynamics are all treated upon; also, the subject of generation, including a consideration of the different forms of reproduction in the animal kingdom. In fact, in every respect, Mr. Marshall has presented us with a most complete, reliable and scientific work, and we feel that it is worthy our warmest commendation. The illustrations are numerous and well designed. The work is published in one large volume, well printed on good paper, with elegant leather binding.

M E D I C A L R E P O R T E R .

ST. LOUIS, JAN. 1, 1869.

We most cordially endorse the following from the pen of our esteemed contemporary, the editor of the *Pacific Medical and Surgical Journal*. Many evils are increased by the knowledge that they exist; and if those who conduct the popular journals of the country would discriminate in the character of their advertisements, we are confident they would receive the unqualified approval of the public. None of the papers of the present day but have very much that would come within the scope of Dr. Gibbon's remarks herewith appended :

“ *Immoral Publications.*—I can not dwell with too much emphasis on the important practical distinction between the moral treatment which inspires confidence and hope, and tends to dispel the cloud of anxiety and apprehension, and that which confirms suspicion and excites alarm; between that which is prompted by professional and honorable motives, and which has the good of the patient for its primary object, and that which is controlled by the love of gain, and makes body and soul the sport of the vilest tricks of trade. The system of empirical advertising may be regarded as an ingenious device for robbing men of their money, their happiness, and their reason. The newspaper, going into every house, carries a flood of this poisonous literature. The newspaper makes our females familiar with the idea of the prevention of pregnancy, demoralizing the married, and corrupting the unmarried. The newspaper prompts the idea of abortion, and indirectly encourages a criminal practice so wide-spread as to disturb the foundations of society, and to affect the national welfare. The newspaper furnishes the abortionist with the means of inviting all the mothers in the land to murder their unborn offspring through his nefarious agency. The newspaper is a daily reminder to every villain who plots the ruin of females, how he can accomplish his diabolical purpose without exposure. The newspaper puts in the hands of every boy and every girl, in city and coun-

try, a daily stream of impure, obscene and corrupting literature, which they could find nowhere else.

"The reader will not understand me as pronouncing a censure on the conductors of the press in this relation. I remember too well the example of the knight and the windmill. The laws of trade govern the press, and mould the code of morals for this in common with other departments of industry. I will do the proprietors of newspapers the justice to declare my conviction that they all believe and know that the advertisements referred to are unfit for general reading, and that they are morally pernicious. I believe, further, that scarcely one newspaper on this coast would admit such advertisements if others did not.

"The same defense applies to those respectable druggists who suffer their names to be announced as venders and endorsers of universal cures for nervous weakness and impotence, and female obstructions. It is well understood that people of intelligence will not believe the statements which are made, and that only credulous and weak-minded persons, composing not much over nine-tenths of the community, will be misled and fleeced by such publications.

"If writings, published with the design of doing good, are capable of so much evil, as appears from what I have previously said, how much more mischief is calculated to result from publications artfully prepared for the very purpose of frightening the reader into the belief that he is sick, and which are daily thrust before his eyes, so that he can not avoid seeing them if he would! I have an earnest conviction that the literature of quackery is much more pernicious than is commonly supposed—that few persons suspect the depth to which it strikes its roots into the corporeal, moral and intellectual life of society, and the consequent amount of vice, trouble, disease and insanity which it produces."

Qualified Practitioners of Medicine.—The following bill was passed at the last session of the Legislature of the State of Ohio, and is now a law in full force. We would most respectfully direct the attention of our own legislators to its provisions, and trust

that they may be induced to enact a similar law. We do hope that the time is not very far distant when such will be the law in every one of the States. It is liberal, proscribes no class of legal graduated practitioners, be they of whatever school or theory, but simply looks to the establishment of a grade or qualification as positively necessary to practice medicine. The following we would commend as a good form, and fully covers the case in point. We ask the attention of the medical profession of our State to this subject:

Medical bill passed in Ohio.—"A bill to protect the citizens of Ohio from empiricism, and elevate the standing of the medical profession.

"SECTION 1. Be it enacted by the General Assembly of the State of Ohio, that it shall be unlawful for any person within the limits of said State, who has not attended two full courses of instruction, and graduated at some school of medicine, either of the United States or some foreign country, or who can not produce a certificate of qualification from some State or County Medical Society, and is not a person of good moral character, to practice medicine in any of its departments, for reward or compensation, or attempt to practice medicine, or prescribe medicine or medicines for reward or compensation, for any sick person within the State of Ohio, provided, that in all cases, when any person has been continuously engaged in the practice of medicine for a period of ten years or more, he shall be considered to have complied with the provisions of this act, and that where persons have been in continuous practice of medicine for five years or more, they shall be allowed two years in which to comply with such provisions.

"SEC. 2. Any person living in the State of Ohio, or any person coming into said State, who shall practice medicine, or attempt to practice medicine in any of its departments, or perform, or attempt to perform, any surgical operation upon any person within the limits of said State, in violation of Section 1 of this act, shall, upon conviction thereof, be fined not less than fifty, nor more than one hundred dollars for such offense, and upon conviction for a second violation of this act, shall, in addition to the

above fine, be imprisoned in the county jail of the county in which said offense shall have been committed, for the term of thirty days, and in no case wherein this act shall have been violated shall any person so violating receive a compensation for services rendered; provided that nothing herein contained shall, in any way, be construed to apply to any person practicing dentistry.

"SEC. 3. This act shall take effect, and be in force on and after 1st of October, 1868."

VITAL STATISTICS OF ST. LOUIS.

For the month of December, 1868.

Furnished for the St. Louis Medical Reporter, from the official records.

DEATHS DURING THE ABOVE PERIOD.

White Males.....	175	Still Born.....	52
White Females.....	183	Under five years of age.....	127
Colored Males.....	17	Between five and twenty years...	84
Colored Females.....	18	Between twenty and forty years.	90
Born in the United States.....	273	Between forty and sixty years....	56
Born in Germany.....	60	Between sixty and eighty years...	25
Born in Ireland.....	44	Bet. eighty and one hundred y'rs	5
Born in other countries.....	18	Over 100 years	1
Total			390

DISEASES.

Abscess.....	2	Fever Continued.....	4
Accidents.....	8	Fever Typhoid.....	17
Apoplexy.....	2	Gangrena	1
Albuminuria.....	2	Gastritis.....	4
Atrophy.....	2	Hepatitis	8
Asthma.....	3	Hemorrhage.....	4
Bronchitis.....	6	Hydrocephalus.....	7
Burns.....	1	Hydrothorax	2
Cancer.....	2	Inflammation	5
Carditis.....	6	Jaundice.....	2
Cerebritis.....	5	Laryngitis.....	3
Convulsions.....	27	Marasmus	5
Congestion of Brain.....	9	Meningitis.....	6
Croup.....	5	Nephritis.....	1
Debility.....	20	Old Age.....	2
Dentition.....	6	Paralysis.....	2
Disease of the Heart.....	2	Pertussis.....	8
Delirium Tremens.....	2	Peritonitis	6
Diarrhoea.....	10	Phthisis.....	44
Diphtheria.....	4	Pneumonia.....	26
Dropsy.....	7	Poison.....	1
Drowned.....	1	Premature Birth.....	3
Dysentery.....	10	Rheumatism.....	8
Enteritis.....	6	Scarlatina	7
Epilepsy.....	1	Scrofula.....	3
Erysipelas.....	1	Syphilis.....	2
Fever Intermittent.....	5	Tetanus.....	4
Fever Remittent.....	3	Trismus.....	3
Fever Puerperal.....	5	Ulceration.....	2

Total number of Deaths for the month of December, 1866.....375

Total number of Deaths for the month of December, 1867.....433

Total number of Deaths for the month of December, 1868.....390

THE
St. Louis Medical Reporter,

A SEMI-MONTHLY RECORD OF MEDICINE AND SURGERY,

EDITED BY

OSCAR F. POTTER, M. D.

VOL. III.

ST. LOUIS, JANUARY 15, 1869.

No. 22.

PROBABLE SOURCE OF THE STEATOZOON FOLLICULORUM.

By J. H. SALISBURY, M. D., Cleveland, Ohio.

Frequently I have noticed in the skin and surface adipose of butchered hogs small opaque masses, the size of a wheat kernel. These are readily discernable by holding the dressed hide and surface adipose between the eye and light, when they appear as minute opaque tumors. My attention, however, was never called to investigate these growths carefully till within the last two months. During this time I have received several samples of pork containing these growths, from Utica and Cincinnati, Ohio. These samples were sent to me, under the impression that the pork contained *trichina*, and was unfit for food. The samples received contained from ten to thirty separate growths, the size of a wheat kernel, in each square inch of surface.

On examination, I was greatly surprised to find the growths little sacs, which were perfectly filled with the *steatozoon folliculorum*; the little animal that inhabits the fat follicles of the human face.

From 200 to 300 of these animals were found in each sac. They were in all stages of growth, from the ovum to the mature form.

It has formerly been supposed that the fat follicles of the human face were the natural home for these animals. It now ap-

pears, however, that their original and natural habitation is in the skin and surface adipose of hogs; and that we are indebted to swine for this parasite as much as we are for trichinæ and tape worms.

The little growths containing these parasites can readily be distinguished from those of "measly pork," and from pork containing trichinæ. The steatozoon inhabits, exclusively, the skin and surface adipose, while in trichinous and measly animals, the parasites occur in the muscles, and often in the other tissues.

CLINICAL CASE.

Reported by S. T. NEWMAN, M. D., St. Louis.

The following case was read before the St. Louis Medical Society, and as it was regarded as one of some interest, and elicited before that learned society a good deal of discussion, I submit it for the columns of the *Medical Reporter*:

Mr. P. C., aged 62, had, during the greater part of his life, enjoyed good health. His family is one of great longevity, and without hereditary liability to disease. His habits were regular and temperate, except that he was an inveterate smoker—always using a pipe. For two years immediately preceding his last illness his health had been unusually good. About one year before, he was married to his second wife.

Some weeks before sending for me he observed symptoms of failing health, but not such as to excite alarm, and he continued actively to employ himself in establishing a new business. His first symptoms were loss of appetite and consequent debility, which, at length, became so great that he determined to seek medical advice, and I was requested to see him. He informed me that for six or eight weeks he had had but little desire for food, and had become so weak that he was no longer able to attend to his business, which required him to be much on his feet. He had no pain or uneasiness in any organ, except what he called a light feeling in the head, which was increased by the erect position. His tongue was slightly furred, bowels inclined to

constipation, action of the kidneys normal, temperature of the body 97½, temperature of the head rather below natural, mental faculties clear; nor was there any indication of cerebral disease discoverable.

He had had neither convulsions nor subsultus. Upon placing my fingers upon the pulse, my attention was at once arrested by its unusual slowness—it being but eighteen per minute, though otherwise regular, and of fair volume. This condition of the pulse had not been observed until the day before, when it was 25.

The physical sounds observed were a slight bellows murmur, and several feeble systolic contractions—in addition to the eighteen pulsations felt at the wrist—but too feeble to be transmitted to the radial artery. Respiration was slow, but unrestrained. I now looked carefully for brain symptoms, but found none. His pupils were small but responsive, and he informed me that they were always small.

His wife stated that for some time past he had been smoking to a very great excess, getting out of bed sometimes during the night and smoking for hours.

As he was an intelligent man, I informed him that I thought his present condition had been brought about by the use of tobacco, which, in some way, had deranged his nervous system. I also informed him that his situation was perilous, and that in walking about the house—which he was inclined to do—fatal syncope might ensue. While talking with him, he said to me that he felt very strange, and immediately he was seized with a slight convulsion, which continued but for a moment. This was the first which he had had.

I enjoined strict quietude, put him upon nutritious diet, such as milk, beef tea and eggs, and directed him to take one ounce of sherry wine three times a day. I also ordered—R. sulph. quinine, 3j; pulvis ferri, 3ij; strychnine, gr. i; M. in pilulas xl. S—one every four hours. This treatment was continued for several days, with slight improvement; his pulse rising to twenty per minute; besides which, the feeble impulse which had been heard in the heart could now also be felt at the wrist *by very*

delicate manipulation. I visited him daily without making any change in the treatment, under which I thought he was doing well. After visiting him one morning as usual, I was sent for in great haste the night following, the messenger stating that Mr. C. had had several severe convulsions. As I now regarded his case as most critical, I requested to have the assistance of Dr. Clemens, and we went down—a distance of four miles—together. We found that he had had several convulsions, which had now ceased, and his condition appeared to be about the same as when I had last seen him. Dr. Clemens discovered well marked bruit in the heart's action, and also the feeble ventricular contractions, to which reference has been made. Counting *these*, Dr. C. thought, would make the heart's action about natural *as to frequency*. It was thought best to continue the treatment. On seeing him next day he appeared rather better; pulse 22; had slept well, and had some relish for food. But while I was talking with him, he went off into a most terrible convulsion without the slightest premonition, which lasted for some time, and terminated in apparent death. His face became livid, and there was neither respiration nor pulsation. As he was lying on his left side, I turned him on his back, and thence, with violence, on his right side, hoping, by mechanical means, to excite the vital action of the heart. This was done several times, but without effect. I then turned him on his back and tried artificial respiration, and at the same time, with open hands, slapped him violently over the chest. Under this treatment I had the satisfaction of seeing him make one or two convulsive gasps, after which respiration and the action of the heart were restored. But he remained unconscious for some time. In this condition I administered an enema of brandy and beef tea, which passed off with a considerable quantity of fecal matter in the bed. The act of defecation seemed to arouse him to consciousness. Treatment continued. Visited him next day with Drs. Clemens and Prewitt. He had had no further convulsions. His condition otherwise was unchanged, except that he now complained of great thirst. Up to this time there had been no irritability of stomach or other gastric symptoms.

For his thirst he was ordered phosphoric acid, and also with the hope that it might supply the brain with phosphorus, and thus stimulate that organ. Otherwise the treatment was unchanged. Dr. Prewitt kindly consented to remain with him during the night. Next morning Dr. P. informed me that he had slept well. There had been no return of convulsions, and he appeared rather better—pulse about 28. From this time he gradually improved, and in a few days his pulse rose to forty. His appetite was restored, and he rapidly recovered strength. I continued to see him occasionally for another week, after which I discharged him, and in a few days he returned energetically to business. He ate well, and took active exercise, and, as he afterward informed me, enjoyed general good health. This state of things, however, continued but for a short time. In spite of my remonstrances, he overtaxed his physical powers, and one night, after having eaten a hearty supper of fresh pork, he was again attacked with convulsions, together with a return of all his former symptoms. As, during all this time, he had continued to take his tonic pills three times a day, they were now discontinued, and he was ordered bromide potass., grs. xx, with tincture of belladonna gtt. xv, every four hours, together with brandy and nutritious diet. This treatment was followed by no satisfactory results. Convulsions were frequent, and his stomach soon became so irritable that it would retain nothing, and we were compelled to administer quinine, brandy and beef tea per rectum. A blister was also applied to the nape of the neck. As Dr. Prewitt (who continued to see him with me daily) thought his convulsions were somewhat modified, when laudanum was added to the injections to prevent them from passing off, we tried morphine, but without any relief. We also occasionally used 1-40th of a grain of atropia hypodermically for its stimulating effect, but the patient continued to grow worse. His pulse sunk to eight or ten per minute, and the convulsions were frequent and severe. During all this time the mind seemed vigorous, and there was no other impairment of muscular function than debility. The patient had free use of all his limbs, and could, at all times, turn himself freely in bed.

When this condition had continued for eight or ten days, there was an unusual secretion of urine which, when tested, was found to be healthy. After this his pulse rose to eighty, but there was no abatement of his convulsions. He now became drowsy and flighty, though, when spoken to, would answer rationally. The increased frequency of his pulse lasted for about twenty-four hours, when it again fell, and in a day or two he died in a violent convulsion.

Dr. Prewitt, assisted by Dr. Outten, made a *post mortem* examination. There was found some slight valvular disease of the heart, but not more than might have been expected in one of his age, and totally inadequate to account for the symptoms during life.

The liver, which had given no evidence of disease, was found to have undergone fatty degeneration to some extent. The brain appeared almost entirely healthy, both upon its surface and when cut into; Dr. Prewitt thought there was slight opacity of the arachnoid, and perhaps a little redundancy of fluid, but of this he was not quite sure.

When this case, together with the *post mortem* appearances, were presented before the St. Louis Medical Society, Dr. Hammer contended that the disease was located in the brain, and that the symptoms were most certainly caused by compression. But I think neither the pathological conditions, nor the symptoms justify this conclusion. It is true that compression will cause convulsions; but they may also be produced by many other causes, as by anæmia, or from whatever cause prevents the brain from being properly nourished, as ligation of the carotid, etc. If Dr. Hammer's views are correct, I think we should have had other symptoms which result from compression besides convulsions and a slow pulse. And if compression existed, how will he account for the wonderful improvement which, in the first, succeeded upon tonic and stimulating treatment, the patient being restored to almost perfect health, which continued until he was guilty of great imprudence in eating, exercise, etc. But Dr. Hammer fortifies himself in his precipitate conclusion by the statement of Dr. Prewitt, that there was

slight opacity of the arrachnoid, and perhaps a little redundancy of fluid. But these conditions, if *present*, may have been but the beginning of the softening process, such as has been known to follow ligation of the carotid. Dr. Maughs thought, under the existing circumstances, we might have expected softening, which, I doubt not, would have taken place if the patient had lived longer. As compression is of frequent occurrence, why do we not more frequently observe the cardiac symptoms which were so prominent in this case?

Dr. Hammer thinks, also, that the section of the liver presented before the society indicates cirrhosis, resulting from interstitial hepatitis. In this I think he is also mistaken. First, because such a condition would have given rise to symptoms which would have suggested hepatic disease. Watson says the symptoms of chronic hepatitis are, some fullness, some weight in the right hypochondriac region, some shooting pain, some discomfort in lying on the left side; perhaps jaundice, not one of these symptoms was observed. Secondly, this liver was enlarged, whereas, in the cirrhosis it is atrophied; "chronic in duration, and thickening of the areola tissue which comprises Glisson's capsule, says Watson, often results from a slow inflammation, causing a change which the French call cirrhosis, the *essence* of which is atrophy from compression of its nutrient arteries which are enveloped in Glisson's capsule." Thirdly, cirrhosis is most frequently met with in dissipated and broken down constitutions, and is usually accompanied with dropsy, and the liver always presents a knobbed appearance, whereas this liver was perfectly smooth. Finally, under this head, Dr. Baumgarten examined this specimen under the microscope, and found fatty globules in abundance.

Then, as autopsy *cadaverica* reveals no lesion sufficient to account for death, we can only speculate as to the cause. I am yet of the same opinion which I conceived at the outset, and which was freely expressed to Drs. Clemens and Prewitt, viz.: that the excessive use of tobacco had exerted some subtle influence upon the brain and sympathetic ganglia connected with the heart. We do know that impressions sufficiently powerful

to cause death may be made upon the nervous system where the scalpel can make no revelations, even when assisted by the microscope.

That the brain was in this case poisoned by tobacco is rendered probable by reference to the known effects of tobacco upon the system, as developed by the experiments of Sir Benj. Brodie and others; and it may be that in the excessive use of his pipe the stem may serve as a sort of reservoir in which quantities of nicotine are constantly collected which, by volatilization, may find its way into the system.

If in this view I am incorrect, I should be inclined to adopt the views which were ingeniously put forth by Dr. Waters, who suggested that the slight valvular disease of the heart which was observed might have so deflected the current of blood in the aortic sinuses, that an insufficient quantity found its way into the coronary arteries, and by this means the muscular tissue of the heart failed to be properly nourished, which caused impairment of its muscular power; in consequence of which the brain was imperfectly nourished, and anæmia ensued.

ON THE PHYSIOLOGICAL EFFECTS AND MODE OF ACTION OF BELLADONNA.

By DR. MEURIOT.

1. Atropine is the active principle of belladonna, and possesses all the properties of this solanaceous plant.
2. Its effects vary according to the kind of animal experimented upon. The carnivora are more sensible to the action of atropine than the herbivora; in man, particularly, it acts as a violent poison; but no animal resists its influence.
3. Its effects differ according to the doses employed; thus, small doses of atropine accelerate the heart and increase its force; toxic doses debilitate the heart and diminish its force.
4. Belladonna is a vasculo-cardiac poison, according to the classification of Professor See; its action is especially localized, both upon the vessels and upon the nerves of the heart.

5. The various phenomena produced by atropine depend for the most part upon this primordial and elective action, or the effects are due to the elimination of the poison.

6. Atropine acts upon the heart through the pneumogastric nerve, the peripheral extremities of which it paralyzes. It constantly increases the beating of the heart.

7. In small doses it increases the tonicity of the muscles of the vessels; in toxic doses it diminishes and destroys this tonicity, whence the application of belladonna in epilepsy, the accession of which affection appears to be owing to disturbances in the central circulation.

8. The variations of the arterial pressure are subordinate to the state of excitation, or paralysis of the muscular tissues of the vessels.

9. Atropine in small doses accelerates, and in toxic doses lessens respiration. Acceleration of the respiratory movements is owing to an excitation of the respiratory centres; lessening of these movements follows paralysis of the extremities of the vagi; hence the possibility of the application of atropine for the treatment of asthma.

10. Atropine in therapeutical doses increases rather than diminishes the excitomotor functions of the cord; in toxic doses it exaggerates the reflex power, even to the extent of producing convulsions.

11. Atropine always produces restlessness, insomnia, delirium, and in toxic doses, coma; it is not a narcotic.

12. Atropine is eliminated by the kidneys, by all the mucous membranes, and sometimes by the skin in man. Its elimination is always rapid, thus its action is of short duration.

13. The effects due to the elimination of atropine are numerous; they are, redness of the mucous membranes and of the skin, frequent desire to pass urine, colic, straining, and vesical tenesmus; profuse perspiration, diarrhoea, etc.

14. The redness and dry condition of the mucous membranes account for the aphonia, dysphagia, dysuria, etc.

15. Not only are all the secretions of the mucous membranes diminished, but there is also, according to the activity of the

circulation, a rapid reabsorption of all the fluids secreted by the surfaces of mucous membranes and of wounds; hence the utility of belladonna against increased secretion of mucous membranes, and its effects on cough, etc.

16. Atropine, when applied locally to the tissues, always determines an activity of the capillary circulation, and, if the dose be a large one, true hyperæmia and blood stasis.

The angina and erythema resulting from the action of belladonna are analagous to inflammatory processes.

17. The modifications in the urinary secretion are connected with the variations in the arterial pressure.

18. Belladonna does not paralyze the striped muscular fibres; it does not determine phenomena of paralysis except, when administered in very large doses, and then always after exaggerated contractions; thus it proves of service in incontinence of urine and fecal matter, in paralysis of the bladder, against constipation, irreducible hernia, etc.

19. Atropine has no elective action on the sensitive nerves. Its local application is always followed by acute and persistent pains. Atropine acts upon hyperæsthetic nerves alone, and often determines analgesia; but it must be applied directly to the affected part.

20. Small doses of atropine elevate the temperature; toxic doses diminish it.

21. Atropine also possesses the special property of dilating the pupil; this is its most constant and persistent effect, and its applications are, for this reason, numerous in ophthalmic surgery.

Atropine paralyzes the terminal branches of the third pair of nerves; this is the singular fact demonstrated by experimental physiology in the study of mydriasis from belladonna.

With this paralysis of the ciliary branches of the common motor nerve of the eye is associated paralysis of the muscles of accommodation.

22. Certain experiments and much reflection on the part of M. Meuriot seem to favor the idea of an exciting action of belladonna upon the sympathetic nerve, or upon the dilator of the iris. A more rigorous demonstration, however, is still required.

—*Gaz. Hebdomadaire and Rankin's Abstract.*

ON THE TREATMENT OF SO-CALLED "IRRITABLE UTERUS."

By GRAILLY HEWITT, M. D., F. R. C. P., Professor of Midwifery and Diseases of Women, University College; Obstetric Physician to University College Hospital.

Nothing more graphic than Gooch's description of the pitiable condition of a patient laboring under that affection to which he gave the name "irritable uterus," can be well imagined; and there is little to be added under this head. But something has yet to be said as to the real nature of the affection giving rise to these symptoms, and on the important question as to the therapeutics of the disease; and I believe that we are in a position to go a few steps beyond the point at which Dr. Gooch left both the pathology and treatment of the affection.

Thus Dr. Gooch describes the affection:

"A young or middle-aged woman, somewhat reduced in flesh and health, almost living on her sofa for months, or even years, from a constant pain in the uterus, which renders her unable to sit up and take exercise but exquisitely tender; even in the recumbent position always in pain, but subject to great aggravations more or less frequently."

Dr. Ferguson, the able editor of the collection of Gooch's writings, not long since published by the New Sydenham Society, adds little to Gooch's description in the way of elucidation of the nature or treatment of the "irritable uterus," in the "Prefatory Essay." He expresses his belief that individuals with a tendency to gout or rheumatism, or who are the offspring of very nervous parents, are more obnoxious to it. Dr. Ferguson then goes on to say, "that another form, or rather another degree of it," has not been described by Gooch. "In this series," says Dr. Ferguson, "the purely nervous aspect of the malady is masked by some obvious change in the uterus or its appendages; but this change is by no means a constant one, either in its seat, extent, or nature. Sometimes there is a congested condition of the uterus, altering its shape into that of a retort, the enlarged and curved fundus being exquisitely sensitive of pressure. At other times the cervix, or some portion of the uterine walls, is the seat of congestion, of varying consistency and of pain. In other instances the uterus may be en-

tirely healthy, but the pain is referred to either ovary, or to some obscure spot in the pelvis itself. I have known the same general train of symptoms co-exist with every form of uterine ulceration, and without any of them; with every degree of uterine infiltration, and without any one of them; in a word, the local changes have been the fluctuating, the nervous affection the constant element." The further remarks of Dr. Ferguson on this subject, which extended to some length, are to the effect that local medication is not of the slightest use, and that it is extremely undesirable to encourage the patient to dwell on her sufferings; and, admitting the necessity for local treatment where "the local complications are clear and urgent," Dr. Ferguson was evidently impressed with the conviction that the cure of such patients must be left, for the most part, to time, the exalted sensibility being evidence of a general rather than of a local disorder.

This conclusion is, it must be confessed, a most unsatisfactory one; that it is an unsound one, I shall attempt to show.

In the second edition of my work on Diseases of Women, not long since published, I stated my belief "that some of Gooch's worst cases must have been really cases of flexion of the uterus." The matter can not, however, end here. Further experience, together with a careful consideration of the whole matter, has led me to a more firm, and, indeed, a very decided opinion on the subject, and I now avow my conviction that the "irritable uterus" is nothing more nor less than retroflexion of the uterus of a marked form; that the symptoms present in the cases described by Gooch were due to the flexion in question; and that the symptoms so dependent can be made to disappear, and the patient be restored to comparative, often to perfect health, by remedying the defect, and by restoring the uterus to its proper shape.

For a considerable time past I have been looking for cases of "irritable uterus, but I have failed to find cases in which the symptoms described by Gooch exist unaccompanied by marked change of shape of the organ. It did not for some time occur to me that such an acute observer as Dr. Gooch would have

overlooked the existence of flexion of the uterus. I am, however, convinced, that this feature in his cases of "irritable uterus" either escaped his notice, or that, if he did detect it, he thought nothing of it. Dr. Ferguson, his commentator, comes very near the mark, for he speaks of a congested condition of the uterus, "altering its shape into that of retort," as having existed in some instances. This fact is satisfactory, in so far as it shows that flexion of the uterus had been observed by Dr. Ferguson in association with the irritable uterus. It appears probable that Dr. Ferguson's attention having been at that period drawn more particularly to the state of the *os uteri* (as was then the fashion) in cases of disease of the uterus, the existence of flexion was only noticed when it was really so considerable as to obtrude itself, as it were, on his notice. And it is quite certain that Dr. Ferguson attached no particular importance to the flexion as a *cause* of the grave symptoms.

The evidence I have to offer, that the symptoms supposed to be due to the "irritable" uterus arise from retroflexion of the organ, is of the following kind; I have had several—I may say as many as fifty—cases under my notice at various times, in which these symptoms, in various degrees of intensity, have been present. The description given by Gooch of some of the cases might have stood for descriptions of the cases observed by myself, but in all of my cases I have detected retroflexion of the uterus, the organ having the form of a retort, in various degrees. On the other hand, having now had a very considerable experience of uterine disease, I can say with confidence that I do not recollect to have met with a single instance presenting typical irritable uterus symptoms *unaccompanied* by the kind of alteration now alluded. I have met with cases, it is true, where the uterus was tender to the touch, and also cases where, in addition to this, locomotion was painful, but never in the degree so graphically described by Dr. Gooch. I know not how more conclusively to prove the truth of the ideas which I have on the matter than by the foregoing argument.

Why, it may be asked, does retroflexion of the uterus give rise to such excessive irritability of the organ? The answer to

this will be, I conceive, as follows: The flexion produces, mechanically, engorgement of the uterus, interferes with the circulation within it, and compresses the nerves which course through its tissues. And the stretching and dragging of the peritoneum involved can not be unimportant. It generally happens in these cases that a cursory digital examination gives an incorrect idea as to the locality of the tenderness, for when the examination is done gently, it will, as a rule, be found that the cervix is hardly, if at all, sensitive, while the slightest touch on the fundus of the uterus, which is now low down and displaced, and can be felt behind the vagina, gives the acutest pain to the patient, thus showing that the sensitiveness is localized. A rough push of the finger against the os gives pain, because the whole uterus thereby undergoes concussion.

The importance of the flexion in those cases of irritable uterus where its *existence* has been actually recognized, has been grievously underrated, in consequence, as I believe, of the doctrine and teaching of Gooch. And as the observations and remarks of Dr. Ferguson only tended to confirm Dr. Gooch's view of the matter, it is not surprising to find, that even at the present day there is an indisposition to believe in the existence of a structural change of the organ in case of irritable uterus.

I am far from denying the importance of structural uterine lesions. But I hold that in a very large number of cases these structural changes are, themselves, the result of accidental alterations in the form of the uterus. Of this class of cases, retroflexion of the uterus is a most marked instance. Here we have a distinct, palpable change in the outline of the uterus, resulting from a fall, a strain, or a soft condition of the organ, predisposing it to become easily changed in its form on application of a slight force. The organ becomes congested, painful, tender; motion aggravates the displacement, the pain increases, and the uterus gradually hardens, preserving the vicious shape it has thus accidentally acquired, and leaving the patient a sufferer, often—if unrelieved—for years.

Is it surprising, if such be the real state of the case, that applications of a caustic nature to the *os uteri* prove quite unavail-

ing in removing the suffering? Or is it to be wondered at that the uterus, if left in the flexed state, remains a source of perpetual discomfort to the patient?

A priori reasoning on the matter, however, would be comparatively unconvincing did it stand alone. But that what has been now put forward conveys the truth, is further supported by the fact, which remains to be stated, that having treated many such cases on the principle alone of reducing the flexion, I have found such treatment almost universally successful in removing the symptoms.

Of late years the question of the treatment of retroflexion of the uterus has received much attention, and, a confessedly difficult disease to cure, when in the chronic stage, much has been done, and can be done, to remedy it. The most satisfactory method of treatment, on the whole, consists in the application of pressure behind the cervix uteri, maintaining the cul-de-sac of the vagina behind the cervix in a high position in the pelvis. A modification of Hodge's pessary answers this purpose very completely. The one used by myself consists of an oval-shaped ring, the length of which varies according to the case, having a gentle curve adapted to that of the vagina. The upper part of the ring prevents the descent of the fundus backward, and, by degrees, the flexion is rectified. In some cases a short stem pessary can be worn in the uterine canal, and retained there by attaching it to the vaginal ring; but, on the whole, the other method is more generally applicable.

The patient suffering from "irritable uterus" then need not be confined to the sofa for an indefinite period. By the use of a ring-pessary well adjusted, locomotion is rendered easy and painless in by far the majority of cases. The tender, irritable state of the uterus subsides gradually, and we may hope, even in the worst cases, to restore the shape of the organ more or less completely. The uterine sound may be occasionally used to bend the uterus, but in the worst cases it can not be tolerated at first. Maintenance of the horizontal posture is necessary in the worst cases during the first part of the time the patient is undergoing treatment.—*The Practitioner*.

THE HYGIENE OF INFANCY:

Abstracts of Lectures delivered at the Bellevue Hospital Medical College, by GEORGE T. ELLIOT, JR., M. D., Professor of Obstetrics, and Diseases of Women and Children.

GENTLEMEN: The subject to which I shall call your attention is of the first importance to the rational study and treatment of the diseases of infancy; for many of these owe their existence to infraction of the laws of hygiene.

To diminish the terrible—though to a certain extent inevitable—mortality of infancy, to avert evil influences, to develop the good, to diminish the necessity for drugs, and so to carry these helpless little ones through the perils of infancy that they may reach the less dangerous years of childhood with well-developed constitutions, are tasks which demand both the knowledge and the application of the best hygienic laws.

While it will be impossible for me to attempt to exhaust the subject, I shall avoid, at least, useless details, and endeavor to fix your minds only on what may be direct and practical; nor shall I hesitate to set the hygienic indications in a clearer light by illustrating pathological conditions which may follow their neglect, as well as those which may forbid success.

If time would permit our thorough study of the subject, we should commence with those hereditary predispositions and influences which affect, for good or ill, the foetus and the man, and those conditions of the mother's health and hygiene which are liable to affect gestation; but, passing over these interesting questions, we come at once to a broad division of the subject.

I. DUTIES OF THE PHYSICIAN TO THE NEW-BORN CHILD.

Establishment of Respiration.—Hitherto, in the womb, it has drawn its supply of oxygen from the mother, through the placental circulation; now it is obliged to obtain this vitalizing agent from the outer world, through organs whose functions have rested in abeyance. Hence our first duty is to see that the function of respiration is fully established. Fully, I say, because it not unfrequently happens that unless this be thoroughly done, portions of the lungs are left unexpanded, collapsed as they were in the womb before respiration was necessary; and thus, suffi-

cient machinery not being set in action, after a while oxygenation is not thoroughly accomplished; the respiration labors; the vital power fails; more lung tissue ceases to work, perhaps collapses; the surface becomes blue, the nerve tissue poisoned by black blood, the senses benumbed, the vital warmth displayed by the advancing coldness of death. This unexpanded condition of the air-cells, which may obtain from the failure to establish respiration, and to which the lungs of infants are liable to revert in conditions of debility and catarrh, is known under the name of atelectasis. Prevent these dangers by insuring such full and continued respirations as may make you morally certain that all the cells have been distended. Hearty and continued cries from the child generally attest this result.

Now children are often born in natural labor, and in labors attended by special dangers, in a condition of apparent death. A broad distinction is drawn by authors between those apparently dead or apparently dying, with a congested or a pallid surface of the body. Treatment has been formulated in accordance with these obvious signs. I do not dwell upon them. No greater congestion of the internal organs has ever come under my observation, in the autopsy of these children, than in cases where the surface has been pallid. Congestion of the skin does not kill; it is congestion and extravasation within that we dread. Skin congestion accompanies internal congestions, but these latter may exist without the former. Signs of strength and vigor may permit treatment contraindicated in premature and puny children. Do not believe that the liver and brain must be pallid because the skin is white.

Do not assume that, because a child is born and shortly dies with a thoroughly congested and blue surface, it died from "the blue disease," or cyanosis. Cyanosis, to constitute a disease, must be recurrent; or if believed to have caused the death under the circumstances we are considering, something more than a patent foramen ovale must be shown by the autopsy. The foramen ovale would be patulous, as a matter of course. How could

it have closed in so short a time, even if its persistent patency were assigned as the cause of cyanosis?

When, therefore, children are born and do not respire, is blood to be let? Is the indication to be based on the color of the skin? What method is to be preferred? Shall we allow blood to flow from the cord, or take it by leeches? I mention the latter advice only for condemnation. If you allow the blood to flow from the cord, hold it well, as you would a cut axillary artery, so that you can control it at once. A teaspoonful is a limit beyond which I would very rarely go. But I very seldom allow any blood to flow, and still more rarely until I have rapidly tried the measures to which I now invite your attention. Establish respiration thoroughly, and the sluggish circulation becomes active, the ruddy glow of health colors the skin.

Free the mouth and nose from mucous and vaginal discharges. Note that there be no malformation. It has been noticed that a simple band of skin over both nostrils, easily divided with a bistoury, has powerfully affected the respiration of a new-born child. Women relatively breathe more with the thorax, men with the abdomen; perhaps the new-born child, destined in lactation to rely so much on the nostrils, may physiologically need them more than we. Free the nostrils and the mouth thoroughly, both in order to admit air, and because in the first inspirations these materials may be drawn into the air-passages and occlude the bronchi. Such conditions may have obtained in utero from premature inspiratory efforts. Liquor amnii and meconium may be demonstrated in the air-passages by the microscope. The child yet contained within the unbroken amniotic pouch, compelled to respire prematurely by reflex irritations, or by that respiratory need awakened by interference with the placental circulation, may thus be drowned in the womb of its mother, and the cause of death demonstrated at the autopsy. Try to prevent this accident to the respiratory passages when the child is born, and in your hands.

When the child is separated from the placenta, if the stimulus of the respiratory need, and the transition to the cool air of the room are not sufficient, spank it over the buttocks with the tips

of your fingers, and rapidly use Marshall Hall's or Sylvester's method for the resuscitation of those who have been drawn from the water. If not promptly successful, plunge the body of the child into warm water (which should be ready in advance), and then into cold water. You thus keep up the warmth, draw blood to the surface, and increase the shock of the cold application. Spur the diaphragm and intercostals by brisk sprinkling of water; a lump of ice or a column of water to the epigastrium; then back again to the warm water, so as to diminish internal congestion and the benumbing influence of continued cold. From the warm water place the child on a blanket, on the floor or bed, and thoroughly try Hall's or Sylvester's method. I prefer Hall's, but use both, and have seen children saved exclusively by each. It is not necessary to draw the tongue forward. It is important to keep the chin in a line with the sternum, and to keep the trachea somewhat prominent. Remember to prevent the child from getting too cold. Hot and cold water again. Slap, sprinkle, blow on the surface of the body, aid the slow and struggling expiration by gentle pressure on the chest. Have a battery on hand. Place the poles on the sides of the neck (third and fourth cervical), and over the diaphragm. The theory is to stimulate the phrenic nerve. The battery, however, under my observation, has proved less valuable than the other methods detailed, and I therefore only indicate the most important application. During this time abstraction of blood will have been considered. Do not let the water be too hot; you may scald the insensible child. Too hot water has been asserted to have caused trismus. Shall you inflate the lungs with your own breath? If so, be sure that the air enters the larynx. With skilful manipulation a catheter makes this certain. Generally the stomach is blown up, unless precaution be taken. Do not blow into the lungs so as to produce emphysema. I have seen emphysema, however, in newborn children, whose lungs had not been thus inflated. If you inflate the lungs, do not blow when the child is making a respiratory effort. In one word, my personal experience makes me rank this method of inflation as secondary to alternation of heat and cold, stimuli, and the methods of Hall and Sylvester.

Persist in these trials as long as the heart can be felt or heard, and a little longer than it can be heard. The quickest way to feel the heart is to put the pulp of your finger under the ribs and lift up the diaphragm. Pulsation can be felt thus when it can not be touched through the thorax. Persist a while after the heart has apparently ceased to beat. A life for which you are responsible hangs upon the effort. There is nothing more surprising than the tenacity with which some infants cling to life, except the facility with which others lose it.

But, gentlemen, all your endeavors will often fail. For your satisfaction, and for the satisfaction of the family, obtain an autopsy. The pathology of foetal life, and of the still-born, yields to none other in interest or value. It is a microcosm but too little explored. It is melancholy to see the neglect of the subject in practice and in the records of great hospitals. A still-born child one would suppose to be a child still-born from some unexplained and sufficient general cause. Start clear from such apathy, such delusions. The autopsy may show that you struggled against hope, that the establishment of respiration was hopeless, or its continuance impossible. Gather this consolation when you can. Search at least for truth. The respiratory passages may be proved by the autopsy to be absent in whole or in part. Trachea or bronchi may be replaced by impervious cords. Cysts, peritoneal effusions, pleuritic effusions, may have developed themselves in foetal life, may not have killed the child, but may prevent air from reaching the lungs, the diaphragm from descending, the lungs from expanding. The pulmonary artery may be absent or barely pervious. The heart may be in front of the neck, within the abdomen, outside of the thorax; it may be unfitted for the strain of the altered circulation from malformation, and from intra-uterine disease. The diaphragm may be open, and the intestines have crowded into the thorax and stopped the lungs from expanding. Extravasations on the brain and into its tissue may have caused the death. These extravasations may have occurred before the labor commenced. I have said enough to show that you may have the consolation of knowing

and proving that your responsibility has been discharged, that the cause of death bore no relation to your management of the labor, or to your choice and use of means to establish respiration, when respiration was impossible.

Ligation of the Cord.—In ligating the cord, always examine the umbilicus thoroughly for hernial protrusion. Cut far enough away from the body to leave space for a second ligature, in case it becomes necessary to apply it after the occurrence of hemorrhage. The gelatinous material composing the envelop of the cord is very apt to make the first ligature slip.

Knots in the cord may be found, but they rarely produce death. Their occurrence have been explained by supposing that the head of the child passed down through a loop in the cord. The cord is often twisted about the neck; and it is sometimes necessary to use forceps to effect delivery in these cases; I have never, however, had to cut the cord before delivery. A cord shortened from this or other reasons, may produce delayed labor; and, if the forceps be used, the resistance due to the cord may be felt upon attempting traction in increasing ratio to the advance. It is difficult or impossible to diagnosticate these cases, until the head is well down in the vagina, or, until the head is delivered.

Warmth and Ventilation.—After having secured the establishment of respiration, it is of the first importance to see that the infant be kept warm. Of all the young mammals, the human probably requires the most care in this respect. Yet exceptional instances may be cited indicative of the opposite condition. Children exposed in the streets and taken to foundling hospitals often die from cold. The competent motherly nurse takes the greatest care of the warmth of the child. Sleeping with its mother is the natural means for warming the child, a species of incubation, but is attended with liability to accidents; the child may be smothered beneath the bedclothes, by the mother or nurse, either accidentally or intentionally, overlaying it. The mother, or nurse, is also very apt to nurse the child too often at night, and thus institute a bad habit both for herself and for the

infant. Moreover, the air of the mother's bed is more or less impure from the lochia.

I now wish to advise you particularly to see that there is constantly in the nursery a sufficient supply of fresh air. No observations illustrate my remarks better than those made in the Dublin Lying-in Asylum, where, for twenty-five years, the mortality was 1 in 6. On the introduction of proper ventilation, the mortality fell to 1 in 19 1-3, and subsequently to 1 in 58 1-2. A thousand cubic feet of space are ordinarily regarded as desirable for an adult; a young child requires no less than an adult. Apart from the respiratory troubles overcrowding produces, it increases the liability to epidemics, to ophthalmia, and depraved nutrition.

Residence.—Very frequently it will be found that a change of residence will prove of decided benefit to the infant, especially when some depressing or contagious atmospheric influence exists in the neighborhood where the child is residing. A change from one part of the city to another may be sufficient. Often, however, the sea-side or the mountain may offer special claims, especially for escape from heat.

Urination.—It is of great consequence to see that the infant passes its water. Urine is secreted and passed in utero, and may be passed during and just after birth. In some children the urine has been retained, and the distention of the bladder has been so great as to prove a cause of delayed labor. Cystic kidneys have done the same. In one case the bladder was found capable of containing two quarts of urine; in other cases it has ruptured before birth. After birth, almost before the child draws its first breath, it often passes its urine. Should it not do so within the first twenty-four hours, we should learn why not. It may happen that the bladder was emptied immediately after or during labor. It may be that so little milk has been taken that the kidneys have not been called upon to act freely. Babies urinate in direct proportion to the amount of milk or liquid nourishment they receive, in a ratio five or six times as great in proportion to bulk as in the case of the adult. Hence, whenever we learn that the infant is passing but a scanty amount of urine daily, it is al-

ways safe to ask whether it is receiving milk enough from its mother or the wet-nurse.

Obstruction to the passage of urine may occur from deformity, or the partial or total absence of the organs necessary to the function of urination: such as partial or complete absence of the urethra, absence of the bladder, with compensatory openings, or of the kidneys, or impervious ureters. Perhaps the bladder may be very capacious or atonic. A cause of obstruction to the flow of urine shortly after birth, in boys, is dependent upon simple agglutination of the urethral walls. (I have more frequently found urine in the bladders of still-born boys than in those of still-born girls. It is natural that it should be so). This condition is easily remedied by the introduction of a silver probe, curved into the form of a catheter; the urine generally trickles out along its sides, and then flows freely. The reflex irritation thus produced is often all that is necessary. Whenever you are told that the water does not pass by the natural outlet, always examine thoroughly for some abnormal opening through which it may be passing unperceived, especially for vesico-vaginal fistula, cloacæ, and hermaphroditism. Sometimes, but not very frequently, a condition occurs, known as hydronephrosis, in which the bladder and ureters may be immensely dilated, so as to resemble the fœtal intestines, and the kidneys affected by the pressure of the retained urine. In one case under my observation, in which this condition was found, my explanation was that, owing to the shallowness of the pelvis and the obliquity of its brim, the bladder had fallen forward, after dilation had commenced, thus producing an angular flexure of the urethra or neck of the bladder, preventing the discharge of the urine, for the urethra was normal in size; accumulation had then occurred, and, by the "back-water" action, produced the changes in the urinary tract, distending the ureters, calices, pelves, and causing absorption of the cortical structure. Retention of urine may also occur from pressure upon the ureter, as by the passage across it of a supernumerary branch of the renal artery. I have never seen a case in which puncture of the bladder was demanded, in

the new-born child, for retention ; but, if necessary, I should prefer the supra-pubic method.

Cleanliness.—The education of the infant should begin with the first days of its extra-uterine life, and a point of no little importance is to see that it does not lie in wet or soiled diapers. Let these be removed immediately after it has soiled them, and soon it will learn to indicate by its cries its disapproval of damp diapers. See that the napkins are not dried in crowded rooms before the registers. Moreover, if a child is allowed to lie almost constantly in its own excretions collected in the napkins, erythematous eruptions, or even ulcerations, will be formed upon its nates, and these may sometimes have a very suspicious appearance. Now, gentlemen, do not be in a hurry to diagnose all ulcerations you find upon the buttocks of an infant as necessarily syphilitic in character. Appearances should not always be interpreted against the infant. Uncleanliness, and neglect to apply other clean, dry napkins as soon as the first are soiled, is a very common source of sores about the infant's buttocks, simulating syphilitic cachectic ulcers. By removing the cause of the trouble, applying a mild lead wash or other lotion, and seeing that the child is well nourished, we can generally heal up these ulcerations without difficulty, and dissipate the mistaken diagnosis. In diarrhœa, redouble precautions: cleanliness, lead water, calamine powder, disinfectants.

Passage of Fæces.—The liquor amnii does not, as a rule, contain meconium. When the finger, introduced into the vagina, encounters this, its presence is commonly supposed to indicate the death of the fœtus, or a breech presentation. But even when there is no breech presentation, we should not lay too much stress upon this symptom when making our prognosis, except in so far as it is indicative of great danger to the fœtus. There are very few positive signs of death of the fœtus. Inability to recognize the fœtal heart-beat is not sufficient evidence that the child is dead. There are few very strong evidences of its death. No pulsation distinguishable, after a long lapse of time, in the cord ; second, the perception by the finger that the parietal and occipital bones collapse and move about on pressure, while the skin

peels off on friction. If you do not recognize by the touch that the child is putrid, try to deliver promptly, and revive it if possible.

Always inquire, the first day after birth, if the infant has had a passage from its bowels. If it has not, examine it carefully. An examination of the external orifice, alone, is not sufficient. Introduce a probe into the rectum, and see whether it does not end in a *cul-de-sac*. It may be that parts of the intestines, which you can not reach, consists only of fibrous bands, and in these various contingencies the question will arise as to the formation of an artificial anus.

Obstruction of the intestinal canal may occur from infraction by an accumulation of epithelial scales.

In children born without an anus, there may be a connection of the rectum with the vagina or the bladder. In the former case, we should make an incision in the median line, establish an anus in its usual situation, and, later in life, heal the recto-vaginal fistula by the usual procedures. In the latter, wait developments, or, if possible, follow the same course.

Simple closure of the raphe or lower part of the rectum is the easiest malformation to detect and treat. When the question arises as to the advisability of groping one's way with bistoury, scissors, and fingers, where the rectum ought to have been, and then of plunging a trocar into something above that we believe to be intestine, or when we select the alternative of an artificial anus, our duty is clear, to represent fully the uncertainties and dangers to the family, with the limited chance of success, the last contingency. If the parents refuse, a painful and unsatisfactory operation need not be performed. If they assent, or saddle you with the whole responsibility of the decision, you must even make the artificial anus, for it has saved life in the history of the operation, though you will probably fail. The alacrity to be felt in the operation is in direct ratio to the expectation of speedily reaching the intestine from below. Before performing it, wait for the intestine to be distended, if you can not feel it, but not too long.—*Medical Record*.

ON DISEASES OF THE URINARY ORGANS.

By Sir HENRY THOMPSON, London.

HÆMATURIA.—The sources of hæmaturia may be determined as follows: 1. The kidneys, where it may be from diseased action, more or less temporary, as inflammation; or from disease more or less persisting, as degeneration of structure; or from mechanical injury, as from calculus there, or by a strain, or a blow on the back. If the hæmaturia be the result of inflammation, there will be general fever denoting its presence; if produced by slow organic change, there will be the history of failing health, and probably urine changed in quality otherwise than by the mere admixture of blood. Where blood is in very small quantity, as it will naturally be at times, note the character of the urine proper—whether of low specific gravity, pale, with albumen in greater proportion than blood, or pus will account for; perhaps renal casts may be found; and look out for dropsies in any degree. In both the preceding forms, if blood is present, it will give the smoke tint to the secretion. Perhaps it may be affirmed that such urine, associated with very little, if any, local pain, is more likely to come from the kidney than elsewhere. In malignant renal tumor, blood may be large in quantity at times: the rapidity of growth and the size attained are the marked characteristics of the disease. If mechanical injury be the origin of hæmaturia, there will be the history of a blow or strain, or there may be the signs and symptoms of renal calculus, of which more detail presently.

2. ^{Then,} ~~hence,~~ putting aside the ureters, you will remember the bladder ^{as the} ~~the~~ second source of hemorrhage; and here it may be ~~due~~ ^{due} to some acute cystitis, stone or tumor. The former is obvious enough from muco-pus in the urine, and through other signs; while the second may well be suspected by the symptoms and its presence realized by the sound. Here the hemorrhage is usually florid, and in proportion to the patient's movements. But the third condition—namely, that the hemorrhage arises from tumor—is not always to be so affirmed. As a rule, however, blood from such a source is larger in quantity than from stone, and may be associated with less of muco-pus. If the

tumor is malignant, it may be felt, and the pain is often severe ; if villous, it gives an even pale-red tint for days together to the urine ; and in both cases the blood is florid, unless it is long retained in the bladder, when dark sanies, like coffee grounds, results.

3. In hemorrhage from the prostate, the third principal locality or source, the same thing occurs, if the organ is hypertrophied and the blood is retained ; but the age of the patient, and the ascertained condition of the organ from the bowel, aid the diagnosis. A slight appearance of blood mixed with the last few drops of urine is not a rare occurrence in chronic prostatitis.

4. When bleeding arises from stricture of the urethra, the patient's history and the cause of the bleeding, almost always instrumental, leave no room for doubt. From the use of instruments, also, in the bladder, hemorrhage sometimes arises. Then it is not to be forgotten that occasionally blood is found in the urine as the result of violent diuretics, from purpura, in fevers, and in a hemorrhagic diathesis.

Now for the treatment of hemorrhage. When you have determined that its source is above the bladder—that is, in the kidney or in its pelvis, probably the first and most influential remedial agent is rest in the recumbent position. Whether from a lesion affecting the intimate structure, or from the mechanical irritation of a calculus in any part of the organ, rest is the first and the essential condition. The patient is, moreover, to be maintained in as cool and tranquil a state as possible.

It is in renal more than in any other form of hæmaturia, perhaps, that direct or internal astringents or styptics are useful. I shall do no more than name those which are most commonly used, namely, gallic and tannic acids, lead and turpentine ; equal to them is, I think, the infusion of matico, say in doses of two ounces every two or three hours. The tincture of iron and also sulphuric acid may sometimes be taken with advantage.

It is, however, in cases of severe hemorrhage from the bladder, or more commonly from an enlarged prostate, that active and judicious treatment is necessary. You will be called some-

times to a patient whose bladder is distended with coagulated blood, or who is passing frequently a quantity of fluid in which blood is the predominating element. Usually this has arisen from some injury inflicted by the instrument, although it may also be from tumor of the vesical walls. Here you will keep the patient on his back, and forbid the upright position, or any straining, so far as you can prevent it, in passing water. To this end give opium liberally, to subdue the painful and continued action of the bladder. Apply cold by means of bags of ice to the perineum and above the pubes. Better still, introduce small pieces of ice into the rectum. Do not use an instrument if it is possible to do without it. There is a great dread in some people's minds about the existence of a large coagulum in the bladder. I have even known a bladder to be opened above the pubes by the surgeon for the mere purpose of evacuating a mass of clotted blood. Leave it alone: it will gradually be dissolved and got rid of by the continued action of the urine; while if you are in haste to interfere, and are very successful in removing it, you will succeed also most probably in setting up fresh hemorrhage. The bleeding vessels have a far better chance of closing effectually if they are not subjected to mechanical interference. Meanwhile, support the patient's powers by good broths, &c.

But it sometimes happens that hemorrhage occurs in a patient who has long lost all power of passing urine except by the catheter. This is a very different position. Here the coagulated mass which fills the bladder must sometimes be removed, or no urine can be brought away. Thus you introduce a catheter and none appears, for the end of the instrument passes into a mass of coagulum, and nothing can issue. Sometimes sufficient may be removed by attaching to a silver catheter a six-ounce syringe or a stomach-pump. Clover's lithotritry apparatus has answered remarkably well with me in two or three instances. Let me caution you never to inject styptics into the bladder; the irritation does more harm than good.

What is the seat of the lesion in his case? Perhaps the bladder: we found it tender to the sound, and it acts with undue

frequency. Yet, remember this is by no means evidence of any primary morbid change; there, such conditions constantly accompanying diseases affecting primarily the kidneys or the upper part of the ureter—much more probably the kidney. The manifest local tenderness, the repeated attacks, the impaired health, the history, the absence of all the more common causes of cystitis in any form, point to the left kidney as the seat of mischief. The absence of albumen and of renal casts—a fact of not much weight, although their presence is of the utmost importance—lead us to believe him free from organic changes affecting the renal organs. I conclude that his left kidney is the seat of calculus, although he has never passed one, and has, at present, no crystalline deposit in his urine—a fact by no means essential to the diagnosis; and that this calculus is the source of the blood and pus found in his urine.

It is sometimes not easy to say what kind of calculus exists in these cases, of which this is a fair type. When any calculous matters have been passed which can be examined, or when the crystalline deposit in the urine is constant, the inference is pretty clear. Add to this that the probability in any case is strong in favor of uric acid, from its known frequency of occurrence—taking large numbers, say, at least, fifteen to one, as compared with oxalate of lime.

A NEW MODE OF EXAMINING THE URINE.—I shall here, by way of episode, refer to a mode of determining the true character of a patient's urine, which is of extreme value in some doubtful cases—a mode which has, never to my knowledge, been recommended or practiced, and which I have systematized for myself. I have already told you how essential it is to avoid admixture of urethral products with urine, if you desire to have a pure specimen. It is sometimes quite as essential to avoid its admixture with products of the bladder. And I defy you to achieve diagnosis—by which, I mean a demonstration, and never be satisfied with less if it be practicable—in some few cases, without following the method in question. When, therefore, it is essential to my purpose to obtain an absolutely pure specimen of the renal secretion, I pass a soft-gum catheter of medium size into

the bladder, the patient standing, draw off all the urine, carefully wash out the viscus by repeated small injections of warm water (before shown to be rather soothing than irritating in their influence), and then permit the urine to pass, as it will do, gut-tatim, into a test tube or other small glass vessel for purposes of examination. The bladder ceases for a time to be a reservoir; it does not expand, but is contracted round the catheter, and the urine percolates from the ureters direct. You have, indeed, virtually just lengthened the ureters as far as to your glass. And now you have a specimen which, for appreciating albumen, for determining reaction, and for freedom from vesical pus and even blood, and from cell growths of vesical origin, is of the greatest value, and has often furnished me with the only data previously wanting to accomplish an exact diagnosis. Mind never to be satisfied to guess at anything; make, very cautiously if you will, your provisional theories about a doubtful case—indeed, the intellectual faculty will do this constantly, and without reference to the will—but arrive at no conclusion, take no action except so far as you are warranted by facts—*Lancet*.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

OUTLINES OF COMPARATIVE ANATOMY AND MEDICAL ZOOLOGY. By HARRISON ALLEN, M. D., Professor of Zoology and Comparative Anatomy in the University of Pennsylvania. Philadelphia: J. B. Lippincott & Co. 1909.

This is a comprehensive synopsis of Professor Allen's lectures on Comparative Anatomy and Zoology; and, although prepared more especially to answer the needs of medical students, it is yet of very great value to the cultivators of rational and general anatomy, as well as the general reader. The author says that, in the attempt to frame general definitions, and give brief classifications of anatomical systems, much liability to error is necessarily incurred, yet these are avoided as much as possible, although any conclusions based upon the present state of a science so actively cultivated as Comparative Anatomy may eventually prove of but doubtful utility. It is easy to group about assumed stand-points the observations of others, but more difficult to preserve, in such arrangements, harmony between the old and new facts. In proposing such, the author has been actuated only by a sincere desire to simplify a confessedly intricate subject.

The work is comprehensive, and in a style attractive as well as interesting. To both professional and general readers it will amply repay a careful study.

PRACTICAL OBSERVATIONS ON THE ÆTIOLOGY, PATHOLOGY, DIAGNOSIS AND TREATMENT OF ANAL FISSURE. By WILLIAM BODENHAMER, M. D. New York: William Wood & Co. 1868.

This is a most complete and extensive treatise on this very painful and troublesome disease. The work is really a history of the disease, comprising an accurate description of its symptoms and pathology, together with the plan for treatment. As is the case with all specialties, when treated in a separate volume, we get the subject in an extended and minute form; and, in this respect, we are glad to see works thus devoted to the special departments of medicine and surgery. Dr. Bodenhamer's work will be found especially useful to the surgeon and hospital practitioner.

LECTURES ON THE STUDY OF FEVER. By ALFRED HUDSON, M. D. Philadelphia: Henry C. Lea. 1868.

This work is the substance of the author's course of Lectures on Fever, at the Health Hospital, and is published to furnish a guide in bedside analysis of each case as it may occur to the practitioner. Dr. Hudson treats febrile phenomena in succession: first, generally or abstractly; and, secondly, in their relation to each form of the disease, thus forming in the mind an ideal of fever, such as may readily apply to cases at the bedside. Dr. Hudson takes up the pathology of the disease, detailing the predisposing causes, their effects, together with their attendant symptoms. He also describes minutely the complications which may arise, and the organs which may the most readily become affected.

In his treatment he gives the effect of remedies and the object to be obtained, as well as the management of the convalescent, and the dangers of a relapse.

Dr. Hudson's book is the best work on the subject we have had since Dr. Bartlett's work, once so justly celebrated. In every respect the work is up with the present advanced state of medical science. We most cordially recommend it to our readers.

PATHOLOGICAL ANATOMY OF THE FEMALE SEXUAL ORGANS. By JULIUS M. KLOB, M. D., Professor in the University of Vienna. Translated from the German by Joseph Kammerer, M. D., and B. F. Dawson, M. D., New York. Wm. Wood & Co. 1868.

We made a favorable notice of this most excellent work a short time since, when the first edition was issued by A. Simpson & Co. The present edition is much improved, and the work is well worthy a place in the physician's library.

The affections of the uterus are elaborately set forth, and all the various pathological conditions well defined. We again most earnestly recommend the work.

MEDICAL REPORTER.

ST. LOUIS, JAN. 15, 1889.

St. Louis Medical College.—On New Year's day the Faculty gave its annual entertainment to the class and the Alumni, at the College building; there were numerous other friends of the institution also present. The tables were loaded with the good things of the season, and, as is usual, where doctors and their disciples most do congregate, there were inordinate consumption and the bight of hilarity. In connection with the feast was the inauguration of a medical library, which is intended as well for the students as the profession. Already there is a large number of valuable works upon the shelves, and it will be the effort of the Faculty to make accessions of all the new works and pamphlets and medical journals as rapidly as possible. We are glad to see such positive evidences of so praiseworthy an undertaking. Beyond a private, and oftentimes spare, collection of works on the healing art in the hands of every individual of the profession, St. Louis could never speak of a public medical library. It will redound to the credit of the St. Louis Medical College to have done this much for the professional community, and it may hope ere long to rival the magnificent institutions of this kind in the Eastern cities.

The New York Medical Record.—This excellent medical journal commences a new volume March 1, and the publishers offer it from January 1 for the subscription price for one year. It is one of the best journals published in the United States. Issued semi-monthly. Price \$4 per annum. Address William Wood & Co., Publishers, New York.

Peroxide of Hydrogen as a Remedy in Diabetes.—Dr. John Day records a case of diabetes which had resisted all ordinary treatment for three years, and which is now rapidly yielding under the influence of the ethereal solution of the peroxide of hydrogen, given in half-drachm doses, mixed in an ounce of distilled water, three times a day.

T H E

St. Louis Medical Reporter,

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No. 23.

UTERINE SECTIONS.

By MONTROSE A. Pallen, M. D., St. Louis.

Notwithstanding the great opposition which has of late been made to a division of the cervix uteri, for the relief of dysmenorrhœa, the time has gone by when its utility can be doubted. There is no denying the fact that the various sections of the uterine neck have sometimes been uselessly made, and that untoward and unexpected unfortunate results have ensued, which seem to militate against the correctness of the principle. Badly selected cases, non-dexterous procedures, a failure to properly pursue the after-treatment, and other causes, demonstrating a want of judgment or a lack of experience upon the part of the operator, have been urged by partisan or prejudiced opponents as strong reasons against its performance. It would be idle to claim that surgical treatment in these particular cases is the all in all, yet it is equally injudicious to maintain that such never does what its advocates claim for it. I have ever been warmly in favor of bold, fearless, and, at the same time, careful, surgery in the treatment of such cases of dysmenorrhœa where the conditions of the parts are such that the prospect of success warrants the risk, and this risk is very much less than its opponents would have us believe. The united testimony of Simpson, Sims, Greenhalgh, and others, shows that, for its frequency, fewer bad results have followed the division of the cervix than perhaps any operation made upon any other organs having such a relative importance to the system at large. In

advocating surgical measures for the relief of uterine abnormalities, in a paper written nearly three years ago,* I had special reference to such conditions there described, and stated that "to say that the operations are always successful is simply preposterous; but that they offer a readier, quicker and more certain beneficial result than any other hitherto devised plan, is *unquestionably true, as far as my experience goes.*" And farther on I stated: "In some instances success is not obtained yet the failures are relatively much less frequent than by sponge tents and cauterization," &c., &c. I am of the same opinion still. My faith is founded on an extended experience since the above was penned, notwithstanding a fatal case of pelvi-peritonitis followed one of my operations; and this one case of death is the only one which has followed sections of the uterus, uncomplicated with the presence of foreign bodies, such as fibroid tumors, &c. I feel that death in this case was not so much the result of the operation as a consequence of a series of peculiar and unfortunate circumstances which surrounded the patient, and of which the limits of this paper will preclude a more extended history. I am sustained in these views by Prof. A. Kneckelhahn, of the Humboldt Medical College, at whose request I performed the sections, as the patient came from the country to consult him concerning her condition.

I am far from believing that uterine sections are devoid of danger, and desire to state that, notwithstanding I have been misunderstood and misrepresented, I recognize their gravity, and so stated in the paper above referred to, and another quotation from it will prove it. * * * "Like Spencer Wells and Baker Brown, who so strenuously advise a systematic preparation previous to ovariectomy; so, too, would I insist upon a similar one in *all* operative proceedings about the genito-urinary apparatus, particularly about the uterus, on account of the intimate reflex connections with the pneumogastric and great sympathetic systems. Fatal embolism, from shock, has been known to occur from simple handling of the womb, and how

*Prize Essay on the Treatment of Certain Uterine Abnormalities. Published in the Transactions of the American Medical Association. 1897.

much greater the danger when operative interference is necessitated; and as success is the general rule after most surgical operations without systematic preparation, is it not preferable to insure greater success by a rational system of previous hygiene, as applied to both body and mind?"

Views which have thus been promulgated are certainly not such as have been accredited to me, and I present them again in order that I may hereafter not be misunderstood or misrepresented, as I have been heretofore; and, furthermore, I wish it understood that I do not cut all the uteri of women under treatment for dysmenorrhœa, nor do I attempt a cure by such means in one-tenth of the number.

I present for the consideration of the readers of the *REPORTER* the history of a case, in detailing which I hope to characterize those conditions which demand division of the neck in order to overcome obstacles not likely to yield to other methods of treatment.

Prof. Edward Martin, chief of the obstetrical department of the Royal University at Berlin, whose experience is such "as to entitle his words to weight," makes these sections of the neck of the uterus, and is quite satisfied with the results obtained by curing only one-half of those upon whom he operates.

Sir James Y. Simpson has been making them for more than twenty years, and still continues them, as does Greenhalgh, in London.

These distinguished gentlemen are strenuous advocates in favor of uterine sections, and whose authority is very great; yet I hope I may be pardoned in stating that I have not only been an humble follower in their footsteps, but have worked out these matters unaided, unassisted, much opposed, and am happy to be able to lend my testimony in evidence of the correctness of their views. Authority is much in medicine and surgery, but experience is probably equally as beneficial.

The case to be presented fell under my observation through the kindness and confidence of my friend Dr. O. F. Potter, whose judgment was not committed in favor of uterine sections but rather was opposed to them. Sometime during the month

of October, 1868, he spoke to me concerning a lady under his charge, who had been married some years, was sterile, and suffered most excruciatingly with dysmenorrhœa. All treatment had thus far been productive of no benefit, and Dr. Potter suggested, as a last resort, that, if an operable case, she should be subjected to surgical treatment; and it was arranged that I should see her as early as practicable after her next menstrual flow. We saw the patient for the first time together, November 18, 1868, three days after the cessation of the menses.

She was aged thirty-two, of leuco-phlegmatic temperament, inclined to be fat; had been in only fair health for years, subject to attacks of ileus and kidney trouble, and was somewhat of a dyspeptic. She did not menstruate until she was about twenty-two years of age, and had never passed the period without suffering—excruciatingly at times, less intensely at others, but always, as she expressed it, "very miserable."

A digital examination per vaginam revealed a small, hard, conical neck, about an inch in length, within the vagina, somewhat lower in the pelvis than normal; the body of the uterus was inclined to the left, and retroverted. Upon the introduction of a Sims' speculum the os uteri was found to be no larger than a broom-straw, through which was exuding the peculiar ropy, viscid, tenacious, muco-purulent discharge, so characteristic of endo-cervicitis and endo-metritis accompanying obstructive dysmenorrhœa. A very small silver probe was with some difficulty entered to the very fundus, about three inches in depth. The convexity of the probe was inclined forward and to the right, on a line with the anterior superior spine of the right iliac bone, and its concavity looked toward the left sacro-iliac synchondrosis. The axis of the probe corroborated the previous digital examination. The patient labored under a latero-flexion with retroversion. The impinging of the sound upon the mucous membrane of the cavity of the body of the uterus was productive of the peculiar sharp, sickening pain of follicular endo-metritis, and its withdrawal was followed by a few drops of blood. The patient was advised to submit to surgical interference; and although a positive relief was not promised, yet

she was assured that it could be obtained only by such procedure.

It were worse than trifling in such cases to expect that sponge tenting could be of avail, because the os was so contracted that the smallest sponge tent could not be made to enter, besides there was latero-flexion, and the tent could not pass the knuckling at the internal os; and the pain inflicted by a few moments' introduction of the probe was so great, the torture of a tent (could it be gotten in) for several hours was not to be entertained; and, finally, from the experience of many cases of sponge tenting, I could safely say, in this instance, that the neck was too hard to look for any dilation or softening to ensue which would be of a permanent character.

These facts being explained, the patient consented to an operation, which was performed on the 24th of November. The patient was placed on the table in the left lateral semi-prone position, the Sims' speculum introduced (and admirably retained in position during the entire procedure by my friend Dr. Yarnall, who kindly assisted me, as did Dr. Potter), and the neck of the uterus held by a tenaculum, when one blade of the scissors was passed into the cavity of the neck, and the other being outside, a section was made by one stroke each on either side. These cuts were not made laterally, but somewhat obliquely, corresponding with the axis of the probe, viz.: the right anteriorly and the left posteriorly on a line drawn from the anterior superior spine of right iliac bone to left sacro-iliac synchondrosis. After the scissors sections, the uterotome was set at an obtuse angle, and the internal os was divided on a line corresponding to the divisions of the cervix, and slightly nicked on either side between these cuts; immediately there issued from the cavity of the body of the uterus quite a quantity of retained mucous secretion, ropy, viscid and tenacious, such as was described above as issuing from the external os. A Simpson's sound was then passed with great ease—in fact it could be readily moved all about—and the axis of the uterus was found to be materially benefited by the cuts. The hemorrhage was rather more than is usually met with in such cases. The

patient was not chloroformed, for two reasons, viz. : 1. The pain of these operations is so slight in most instances that were it not for the creaking of the scissors, the patient would not be aware of what was being specially done. 2. In procedures such as require so much nicety of operative manipulation, it is better, whenever at all practicable, to have the patient in such condition as may enable her to be of assistance, by keeping as still as possible, which she may not be able to do if not thoroughly and completely anæsthetized.

I have seen grave accidents follow where the patient suddenly jumped about on the table when only partially under the influence of chloroform, and, consequently, seriously wounded. I once saw the vagina and rectum both divided by a woman's leaping up just as an operation for division of the sphincter ani was commenced, and it was supposed that she was fully under the influence of the vapor. A woman who has sense enough to appreciate the importance of such an operation as that of division of the cervix uteri, certainly has sufficient fortitude to bear up under pretty trying circumstances, and will materially facilitate the surgeon in his procedure.

To resume the description of the case in question: After the hemorrhage had been checked by the application of small sponges, wetted in cold water and firmly pressed in the wounds, the divisions about the internal os were kept patulous by means of a small piece of sponge, saturated with a solution of sesquichloride of iron (one of the iron to three of glycerine), and pushed well up into the cavity of the body; the other wounds were carefully packed with cotton, saturated with the same styptic solution, and the whole enclosed in a cup-shaped pledget of glycerole cotton, which of itself was maintained in position by a tampon of dry cotton, filling the whole vagina. It will be thus seen that it is almost an impossibility for hemorrhage to take place, and above the pledgets within the uterus prevent a union of the divided surfaces before the hitherto contracted canals can be made to cicatrize with a calibre of at least the size of a Simpson's sound.

The osmosis-drainage produced by the glycerine was abund-

ant from the uterine and vaginal surfaces, and the usual dressings and probing continued up to the next menstrual period, which came on about the 8th of December, and, as is common after these operations, was quite painful, although the patient was not confined to her bed, notwithstanding she had been directed to maintain the horizontal position during the period of the menstrual flow.

On the 13th of December, the flow having ceased, Dr. Potter and myself visited her and found the wounds looking well, and made an application of chromic acid (one of acid to one of water) to the cavity of the uterus, in order to get rid of the follicular endo-metritis, and we found no difficulty in passing a Simpson's sound to the fundus, but which gave great pain when it was pushed on to the mucous lining of the cavity. The usual hot water syringings were ordered, but on the 15th of the month the patient had a violent chill, succeeded by sharp fever and great pain in the lumbar region, and an inability to void her urine. She had taken cold, because she had caused her bed-room floor to be washed, which induced one of her old kidney attacks. There was a partial suppression of urine. We examined most carefully for metritis, pelvi-peritonitis and pelvic cellulitis, having reason to fear that such might be lighted up by the operation (although rather late to supervene after the cutting) and the application of the chromic acid. The trouble about the kidney aroused the attendant bladder difficulty, most frequently existing with acute renal disease, and our patient suffered considerably. However, after a few days these conditions yielded to treatment by diuretics and anodynes, and on the tenth day afterwards she was strong enough to bear another uterine examination, when the cuts were found to be quite healed, and the sound was again passed, the uterus being still farther towards its normal axis. An application of the comp. tincture of iodine was made, as the discharge from the os was thinner, less viscid and ropy, indicating an amelioration of the follicular endo-metritis. During the ten or twelve days succeeding the chromic acid application, small shreds of slough passed from the cavity of the uterus, looking like pellicles of the white

of an egg, somewhat darkened; and the non-appearance of these slough-shreds was a farther indication for the application of the iodine.

From that period until the 29th of December nothing was done, and on that day her menstrual flow very unexpectedly made its appearance, but continued only three days, less painful than before, and also somewhat darker and clotted. On the 8th of January, 1869, she was again seen, and the velvety appearance of the lining membrane had almost disappeared, the discharge almost healthy in appearance, and a Simpson's sound passed in the *normal axis* of the uterus!

An application of carbolic acid (pure) was made to the cavity of the neck alone, and the hot water syringings continued as usual.

On the 17th of January Dr. Potter saw her, and she was menstruating again, this being her regular time; and the menstruation was painless as far as regards the uterus; the only unpleasant feeling experienced was some back-ache, probably the result of the lingering remnants of the old follicular endometritis, possibly connected with her old kidney trouble.

On the 20th of January she was in my office, and stated that she felt quite well.

It will be observed in following the history of this case that a very grave condition, viz.: latero-flexion conjoined to retroversion, existed; that it was co-added to endo-metritis; that dysmenorrhœa of an excruciatingly painful character existed, and that the patient was sterile.

Sterility in such patients is almost absolute, because no spermatozoa could ever reach the cavity of the uterus; and if they did, the acidity of the discharge would kill them, even if the germinating fluid could possibly reach the external os in such an exaggerated position as it occupied, lying well up behind the pubis. As to whether the sterility will be overcome in this particular instance, of course no one can predict, yet we may reasonably hope that it will.

Could this patient have been ameliorated by any other plan of treatment? Would sponge tenting, dilatation by bougies,

cauterization of the neck, &c., have relieved her? I am quite sure that such would have been attended by great difficulty, and I feel equally sure that failure would have been the result, even after months' of treatment.

The cases which have been reported as being benefited by a non-surgical cutting treatment are not those which are rapidly accomplished, and they are also attended with great pain. Possibly some very rare exceptions of non-painful sponge-tenting and dilatation by bougies have fallen under the observation of medical men; but Sir James Y. Simpson* states: "I have frequently followed out Dr. Macintosh's plan of treatment, by means of bougies of daily increasing size, and sometimes with perfect success. But you will find, if you come to try it, that it is an irksome and tedious process, taking up a great deal of your time, and often causing very great pain to the patient. So much suffering do some patients experience from this daily distension and dilatation of the os and cervix, that they are content to bear their monthly pain rather than submit to the ordeal of such a frequent torture," &c.,

Every practitioner of medicine and surgery can bear testimony as to the correctness of Sir James Y. Simpson's statement.

In deciding, then, what class of cases should be subjected to surgical treatment, we should be governed by certain general laws. No case having ever had pelvic-cellulitis or metro peritonitis should be operated on, except as a last resource, and then only at the solicitation of the patient and her friends; neither would I ever divide the cervix if there were a hemorrhagic diathesis. If the neck of the uterus be indurated, non-distensible, non-sensitive, more than half an inch within the vagina, and if there exist stricture at the internal os, caused either by flexions or engorgements, together with the follicular endometritis, so readily diagnosed by the probe, producing the sickening, sensitive pain, and on its end, when withdrawn, a bloody mucus, or blood alone—if these conditions exist, I should not hesitate to advise an operation, provided none of the

*Clinical Lectures on Diseases of Women. By J. Y. Simpson, etc. p. 114. Philadelphia: Blanchard & Lea. 1863.

above mentioned contra-indications were also associated with the previous history.

Each case, however, must be tried upon its own merits, and the judgment of the surgeon should be guided by the same general principles as would govern him in making any grave operation not absolutely necessary to save life, but demanded only to relieve present suffering and to beat back prospective disease. It is far better to anticipate the sequelæ of faulty histogenesis, sure to follow long continued uterine trouble, than to await the certain developments of such cachexiæ as the scrofuloses so often met with in the older dysmenorrhœic patients.

**REMEDIES WHICH MAY BE EMPLOYED AS SUBSTITUTES FOR
SULPHATE OF QUININE IN THE TREATMENT OF MALARIAL FEVER.**

By JOSEPH JONES, M. D., Professor of Chemistry in the Medical Department of the University of Louisiana, New Orleans, La.

NO. 36—CHLORIDE OF SODIUM—COMMON SALT.

Dr. Scelle Montdegert appears to have been the first to call the attention of the profession to the value of chloride of sodium in the treatment of intermittent fever; and however fanciful his notion that every paroxysmal fever is caused by the presence of fibrin in the venous blood, which should, in the normal state, be removed by the process of assimilation, and that the salts of quinine owe their power of arresting paroxysmal fever to their ability to dissolve the fibrin present, and that chloride of sodium is also capable of arresting paludal fever, because, like quinine, it is a solvent of fibrin, we must nevertheless award to him great credit for having discovered one of the cheapest and most widely diffused agents which may be substituted for Peruvian bark and its active principle, quinine, which is not only very costly, but is liable to adulterations, monopolies, and to final destruction from the wasteful and reckless manner in which it is gathered and prepared for the market.

In his memoir upon the treatment of intermittent fever, pre-

sented to the French Academy of Medicine, July, 1850, Dr. Soelle Montdegert declared that from the results observed during several years with the beneficial effects of chloride of sodium in the treatment of intermittent fever, this medicine should show, with the salts of quinine, the prerogative of arresting the paroxysms of intermittent fever.

He says that half an ounce of salt, administered in half a glass of infusion of coffee, in the morning, before eating, during the apyrexia, will be sufficient to arrest the paroxysm. Its use in this manner should be continued three days.

According to the testimony of Dr. W. P. Lattimore, M. Piony, who was one of the committee appointed by the academy to report upon the memoir of Dr. Scelle Montdegert, experimented extensively with the chloride of sodium in intermittent fever, and confirmed the previous observations. This subject is of so much interest that we present the testimony of Dr. Lattimore to the success of M. Piony with the chloride of sodium in intermittent fever, in full:

"M. Piony holds that in all paroxysmal fevers the spleen is enlarged; that the anatomical lesion is the cause, the fever only the symptom; that whenever the spleen has a greater length (measuring in a line extending from the middle of the axilla to the anterior superior spinous process of the ileum) than from thirty-one to thirty-three lines, intermittent fever exists. Believing thus, the symptoms for him are zero, while the state of the spleen stands at the other end of the scale, and is everything—percussion (pleumetric), of course, being the *experimentum crucis*.

"We can not resist the temptation of here paying a tribute to the skill with which M. Piony employs percussion in making a diagnosis. With him auscultation is but an infant when compared with its full grown brother, percussion. By its aid he interrogates the abdominal viscera as frequently as the thoracic, and with no less success, for he has brought it to an almost incredible degree of perfection. With his plate of ivory and his flattened fingers' ends, he diagnosticates almost everything—tumors of the abdomen, abscesses everywhere, aneurisms, &c.

All acknowledge the delicacy and accuracy of his test, while the looker on is lost in admiration, and wonders whether all his senses are not really concentrated in the ends of his fingers, which, by constant drumming, have at length become the very reverse of tapering.

"Wishing, then, to experiment with salt, a few cases of intermittent fever (old stages), contracted in Algiers, were selected as subjects. Behold, then, Piony at the bedside. The patient asserts that he contracted the fever and ague several years since in Africa; that he has frequently been cured, but that the disease has constantly reappeared at the end of fifteen days, or one month at farthest. The type of the fever is tertian. The spleen is percussed, and found to be abnormally dull throughout its whole extent; the entire splenic region is sensitive upon percussion, particularly over the dullest points, and each blow is accompanied by marked contortions of the countenance. This sensibility extends but little beyond the region of dullness, which last occupies an extent of fifty-three lines, measuring in the direction indicated above. To this patient a drachm of salicin is administered without producing any change in the dimensions of the spleen. A few minutes subsequently half an ounce of salt, mixed with a cup of soup, is given, and upon carefully percussing the splenic region at the end of four minutes, this organ is found diminished one inch from above, downward. The next day the spleen is found to be of the same size, but upon the administration of a second dose of salt it suddenly contracts and measures nearly three-quarters of an inch less than yesterday. The resonance throughout the entire organ has increased, while the sensibility has diminished. The succeeding day the attack of fever is very slight, and, upon giving a third dose, the disease does not return; and when seen six weeks subsequently the patient is still free from his African enemy. Thus we see that a diminution of twenty-four lines in the length of the spleen was the result of the medicine, the fever being cured more effectually than ever before—i. e., the patient had remained free from all relapse for the space of six weeks, one month having previously been the longest period of immunity.

" We have the notes of seven cases of well-marked intermittent fever, in all of which the administration of the chloride of sodium was followed by rapid decrease in the volume of the spleen and cure of the febrile symptoms. We also have the record of three cases, in which salt was unsuccessfully used ; in one of these, the sulphate of quinine effected a cure ; in a second it, too, failed, while in the third it was not tried. These were all well-marked cases of intermittent fever, such as would pass muster in any of our own malarious districts.

" Let it be remembered that most of the fever and ague met with in the Parisian hospitals is of long standing, and imported from the malarious districts of Algiers, which generated a form of the disease even worse than that found amid the marshes on the banks of the famed Maumee ; that these cases have been treated again and again ; have been cured now by the sulphate of quinine, now by arsenic, but only to reappear upon the slightest exposure or imprudence ; in short, to recur as only *the shakes* can recur.

" We witnessed many of the experiments of M. Piony, and in the great majority of them the fever yielded to the salt quite as readily as to the salts of quinine. And as to the theory of M. Piony, the spleen diminished under the use of the remedy, *pari passu*, with the febrile symptoms, in every case where the disease was cured, proving that this organ really shows the influence of remedies over this class of fevers—that it is, as it were, a febro-barometer—for the diminution of the spleen is a constant phenomenon accompanying the cure of the disease, whatever the curative agent employed.

" M. Piony's method of administering the chloride of sodium is to give half an ounce in a cup of thin soup during the apyrexia and fasting. It usually agrees with the stomach perfectly well, but in some few cases we have seen it excite vomiting and diarrhea. Three doses commonly suffice to effect a cure, the first two to be taken on succeeding days, and the third after an interval of one day. Should the spleen be undiminished in volume by the first dose, we may be sure that the remedy will not cure the disease ; and the same is true of all the anti-peri-

odics. Excepting in rare cases, the diminution of the spleen occurs immediately upon the administration of the remedy (salt or sulph. quinine), and may frequently be detected within one minute, after which the organ remains stationary until a second dose of the medicament be administered."—*On the Employment of Chloride of Sodium in the Treatment of Intermittent Fever*, by W. P. Lattimore, M. D., *American Journal of the Medical Sciences*. July, 1852. No. xlvii, new series; pp. 102, 104.

The Observations of Dr. Moroschkin upon the Value of Salt in the Cure of Ague, with the Testimony of the preceding Observers.—He states that during the prevalence of scorbutus and ague in the Trans-Caucasian province of the Black Sea, quinine sometimes entirely lost its powers. When no very prominent scorbutic affections were present, he administered one ounce of salt in water, in two doses daily, during the absence of the apyrexia. In patients, in whom the paroxysms were incomplete, very abundant sweating followed, the skin resumed its natural appearance, and the various other signs of amendment followed, the disease becoming cured in a few days, and the dose having to be diminished. In cases in which the improvement was only partial, quinine now became more efficacious. Of one hundred and three cases, seventy were completely cured, and the others ameliorated.—*Rankin's Abstract of Medical Sciences*, No. 25. January to July, 1857; p. 36. *Smith's Jahrb.*, No. 6. 1856.

Dr. Hutchison, of Brooklyn, has placed on record twenty-two cases of intermittent fever, which were treated with salt. "The dose in which the salt was given varied from eight to twelve drachms during the apyrexia. At first eight drachms were given, but the amount was subsequently increased to nine, ten, and even twelve drachms in one instance, with obvious benefit. Children required somewhat larger proportional doses than adults. Mucilage of elm was selected as the vehicle, on account of its convenience, and because it sufficiently disguised the remedy, which was deemed a matter of importance, for it would have lost much of its efficacy, or have been repudiated altogether,

had the patients known they were taking simply common salt. The following was the formula used :

R—Chloride sodium.....3iij.
 Ulmi pulv.....3iij.
 Aq. bullientis.....f3viiij.

Infuse two hours and strain.

This forms a saturated solution. Dose, a teaspoonful every two, three or four hours, so that five or six doses may be taken during the apyrexia. It was not deemed necessary to precede its employment by evacuants, because the patients had recently used such remedies during their former attacks ; and, moreover, Dr. Hutchison preferred to use the salt alone, because its real value could thus be better determined. When it is necessary to precede the use of the salt as an antiperiodic by emetics or cathartics, perhaps there is nothing better for the purpose, in ordinary cases, than the same remedy administered in emetic doses, which will usually produce, also, moderate catharsis. In most of the cases the remedy was well tolerated by the stomach, nausea or vomiting having occurred in but four instances. Four cases also had moderate alvine evacuations, unattended with pain. There was considerable thirst in every case, but no other unpleasant effects. When given in the above manner (dissolving it in as small a quantity of water as possible), it is less likely to disturb the stomach than the same or even a less amount would in a larger proportion of the solvent. The taste was objected to by some, while others disliked it much less than quinia. The following are Dr. Hutchison's conclusions :

1. Although inferior to chincona and its preparations, it yet forms a very good substitute for them in intermittent fever, having failed, as we have elsewhere seen, to produce a speedy suspension of the paroxysms in 31.8 per cent of the cases only ; in a majority of cases, therefore, it may be substituted for quinine.

2. It may be used instead of, and, indeed, preferably to, quinine. First, in cases not unfrequently met with, where the latter remedy is forbidden by the very unpleasant nervous and cerebral symptoms it produces (delirium, tinnitus aurium, cepha-

lalgia, faintness, &c.), an example of which I have recently seen in the New York Hospital, when sulphate of copper was substituted. Thirdly, it is commended on the score of *economy*, which is a consideration of importance to the poor especially, who are now, in a measure, debarred from the use of quinia by its high price. And, fourthly, it is always at hand, whilst quinia sometimes can not be obtained.

It has been found to be more energetic in curing ague than any of the vegetable or mineral tonics commonly used for that purpose, excepting bark, and should, therefore, be preferred to arsenic, which has been ranked by M. Andral, Prof. Wood, and, indeed, most other authorities, next in value to quinia. And, moreover, I think arsenic should never be used until after quinia and *common salt* have failed to do good, on account of its unpleasant, and sometimes disastrous consequences, to the general system and stomach, and the increased facilities it affords for using the remedy as a toxicological agent."

NO. 37—NITRIC ACID.

Dr. George Mendenhall, of Cincinnati, called the attention of the profession to the use of nitric acid in the treatment of intermittent fever in 1854; the facts upon which his paper was based were chiefly derived from an inaugural dissertation by Dr. E. T. Bailey, of Indiana.

Dr. Bailey states that in the section of country in which he resides there is a large portion of marshy land, and therefore the circumstances are favorable to the development of autumnal fevers. His attention was first attracted to the use of nitric acid in the treatment of intermittent fever by noticing its effects in a case of chronic intermittent, which was attended with profuse night-sweats, and for which complication he administered the remedy. In this case there had been daily paroxysms for the preceding five days; night-sweats profuse, the tongue coated and the bowels constipated. Nitric acid was given in doses of six drops, diluted with water, in the evening, and he was agreeably surprised to find that the paroxysms did not return on the following day, and this circumstance induced him to try its

effect in other cases as an anti-periodic. Since that time he has treated over ninety cases of intermittent fever with this article with remarkable success. Of this number all recovered promptly except ten; and in every one of these unsuccessful cases the remedy was discontinued, contrary to directions.

Fifteen of the whole number were of the tertian type, and seventy-five of the quotidian. In fifty cases there was no return of the chill after commencing the use of the acid. The others were rarely attended by more than one paroxysm, and in no case by a third. When the patient had a paroxysm after taking the medicine, it was, in every case, diminished in intensity and in duration.

In Dr. Bailey's practice this remedy has entirely superseded every other article for the purpose of interrupting the paroxysms of intermittents. His mode of proceeding is to give from five to eight drops of the commercial nitric acid, properly diluted, once in six hours, without regard to intermissions or exacerbations. Cathartics and alterants may be necessary for the purpose of changing certain conditions of the system; but so far as the interruption of the paroxysms is concerned, the acid may be given without any preparation of the system whatever, if we choose to do so.—*American Journal of the Medical Sciences*. October, 1854; pp. 581, 582.

Dr. J. C. Thompson, of Arkansas, has recorded in the Southern journal of the *Medical and Physical Sciences*, August, 1857, the successful trials of nitric acid in six cases of intermittent fever, in which the customary remedies had failed. In one case, in which there was menorrhagia, a powder, consisting of one grain of opium and two grains of sugar of lead was given every two hours, until the discharge subsided; in two others, blue moss was prescribed, in conjunction with the acid, and in the remaining three cases, pills of sulphate of iron, aloes and rhubarb were given in addition to the acid. He recommends one ounce of the acid to be diluted with six ounces of water; of this, the patient is to take one drachm in an ounce of water every two hours during the intermission.

Dr. Wm. A. Hammond has added his strong testimony to the

value of nitric acid in intermittent fever, published in the *Maryland and Virginia Medical Journal* for February, 1861. Dr. Hammond, after presenting the results of the employment of nitric acid, in tabular form, he remarks:

"The table forms the basis of a report made about four years since to the Surgeon-General of the army, and has never been published. The cases were treated at Fort Riley, Kansas Territory, in the post hospital, then under my charge, in a period of six weeks in the summer. Upon referring to the table, it will be seen that, in all, forty-one cases were treated, ten of these being of the quotidian type, and thirty-one of the tertian. Thirty-two cases were treated with the nitric acid and nine with the sulphate of quinine. Of the cases cured by nitric acid, three had previously used quinine without effect, and of those in which quinine had proved successful, nitric acid had been employed without benefit in two, and in one other had to be omitted on account of causing nausea, heart-burn, etc.

"The average period of treatment, before the disease was permanently arrested, was the same with each remedy—three days. The nitric acid was uniformly given in doses of ten drops (properly diluted with water) three times per day, the quinine in doses of eight grains three times a day. Besides the fact that the nitric acid was equally successful with quinine in arresting the disease, the difference in the cost of the two articles is so greatly in favor of the former substance as to render it an object of importance to make its curative properties more widely known. Since the foregoing cases were treated, I have very frequently employed nitric acid in the treatment of intermittent fever, and have rarely been disappointed in my expectations of its curative action. In fact, in simple, uncomplicated intermittent, I seldom have occasion to use anything else.

"In cases of enlargement of the spleen, consequent upon frequent attacks of the ague, the remedy in question has, in my hands, proved very advantageous."

These facts demonstrate conclusively that nitric acid is a most valuable substitute for quinine; and we can readily con-

ceive, by a reference to its powerful alterative effects, simulating even those of mercury, that it would be beneficial, also, in remittent, typhoid and typhus fevers. Its great cheapness and facility of administration, added to its most energetic and decided effects, should lead, at least, to an extended trial of its virtues by the profession.

CASE OF INFANTILE FEVER.

By Z. C. McELROY, M. D., Zanesville, Ohio, President Muskingum County (Ohio) Medical Society.

Willie Spurgeon, aged ten months, refused the breast, and became very restless, fretful and feverish, 17th of October last. Had frequent discharges from bowels, excessively fœtid. Mother is convalescing from typhoid-malarial fever. Child nursed during her illness. While the mother's temperatures were higher than natural, she had an abundant flow of milk. As she became convalescent the milk was greatly reduced in quantity, and the child was then fed from the table to make up deficiency. Passed a bad night. Next day mother gave it small doses of castor oil and paregoric, as she thought the baby had the flux. Very restless and irritable all day (18th), and another bad night.

October 19th—Saw child first time. Bowels still very loose, and smell so bad as to make the mother sick at stomach. Has lost flesh rapidly. Tongue coated; breath very strong. Pulse rapid, though not timed, owing to its restlessness. Has nursed very little since it was taken sick. Had not vomited any. Temperature 101.

Diagnosis.—Nutrition wholly arrested, as attested by its refusal of food. Destructive metamorphosis proceeding far too rapidly, as attested by the increased temperature; and of albumenoid tissues, as attested by the extreme fœtor of the debris in the discharges. Though bowels were still very loose, there was partial retention of the debris of tissue metamorphosis, as evidenced by the cerebral symptoms of restlessness and irritability.

Prescription.—Carbolic acid, gr. v; mint water and simple syrup, of each half an ounce. Teaspoonful every four hours. Warm bath in the evening. The object of the carbolic acid was to oxydize the tissue debris, and thus render it harmless, and to retard tissue metamorphosis.

October 20—Child passed a very bad night. Passages from bowels diminished in frequency, and did not smell so bad; was improved in character. Tongue still furred; breath bad; did not take the breast. Temperature 100½. Pulse still rapid; pupils very sluggish and dilated. Loss of flesh very perceptible since 19th. Destructive metamorphosis somewhat diminished, as evidenced by the fall of half a degree of temperature; retention of tissue metamorphosis, as evidenced by the cerebral symptoms; considerable interference with tissue changes in the great nerve masses, particularly the cerebrum and cerebellum, as evidenced by the state of the pupils. Nutrition still entirely suspended.

Prescription.—Warm bath immediately. Two teaspoonsful castor oil as soon as it is out of the bath. Carbolic acid mixture every six hours.

21st—Patient better this morning. Oil operated freely, and discharges were quite natural. Slept some, but was still very fretful. Pupils very large and sluggish; pulse slower and fuller; temperature 99½.

Diagnosis.—Nutrition still at a stand still. Tissue waste still too large, as evidenced by the temperature.

Prescription.—Pulv. Doveri, gr. x, powders number vj. One powder three times a day, the purpose of which was to retard tissue changes or destructive metamorphosis, and thus reduce temperature, and furnish power to the pupils. Warm bath in the evening. Carbolic acid mixture morning and evening.

October 22d—Patient greatly improved. Slept well night before. Was decidedly better after the first powder, and continued to improve all day. Commenced picking at a cracker to-day, and takes all the milk the mother can supply. Pupils contract promptly. Temperature 98½. Tongue cleaning up

rapidly. Breath no longer foetid. Bowels altogether natural. Pulse nearly natural.

Diagnosis.—The Dover's powder fulfilled expectations. Nutrition resumed, and waste and repair about equalized (tissue making).

Prescription.—Continued Dover's powder every six hours. Requested carbohc acid to be discontinued, but mother informed me it was all gone. Warm bath again in the evening.

October 23d—Patient still better. Temperature 98. Slept well. Is no longer restless or fretful. Pupils natural. Took all the mother's milk, and wanted to eat at table.

No medicine. Case dismissed.

October 24—Saw patient's mother in passing. Says the baby is entirely well.

This case is reported because it is deemed one of more than ordinary interest. The cause of the child's illness was, doubtless, owing to the change in the mother's milk during her sickness, which was characterized by much the same symptoms, except the periodicity in her case, absent in the child's. Then the philosophy, diagnosis and treatment were all point-blank; and looking at it from the the termination, partook of that certainty always gratifying in the retrospection of any case.

The bilious symptoms of the old style practice were strikingly prominent, and yet it was treated without mercurials, or any uncertainty, during its progress.

A SOMEWHAT SIMILAR CASE IN AN ADULT.

Mrs. B., aged thirty-eight; robust and hearty; four children. October 27, 1868, 10 o'clock A. M.—Has been sick since yesterday. Partook largely of cream and mush for supper the night previous. Bowel complaint came on latter part of the night. Is intolerably offensive. Very tender bowels, with but little pain. Pulse full, quick and strong. Temperature 103.

Diagnosis.—Excessive tissue metamorphosis, as evidenced by the high temperature and excited circulation.

Prescription.—Crystals carbolic acid, gr. xv; mint water and syrup, of each one ounce. Teaspoonful every four hours, to oxydize tissue debris, and render it harmless. And as it was passing off by the bowels, in the form of painless diarrhoea, it was not interfered with.

Recalled to the case at half past five o'clock P. M. Found the patient with violent pain in the bowels. Came on about noon.

Diagnosis.—Excessive tissue change in the nerve masses supplying dynamic force to the abdomen.

Prescription.—By hypodermic injection, $\frac{1}{4}$ gr. morphia, in solution, over the bowels. Continued carbolic acid mixture. In a quarter of an hour patient was perfectly easy, except backache. Permitted to have a cup of tea, without milk or cream, and piece of light bread, for supper; but no toast, that giving rise to flatulence, and was inappropriate in that case just then.

Eight o'clock P. M.—Patient very comfortable Backache gone. Continued carbolic acid mixture through the night as she awoke, with instructions, if pain returned, to take one or more pills, valerianate of morphia $\frac{1}{4}$ gr.

October 28th, A. M.—Patient slept considerable. Only one motion from bowels during the night. Three small ones after daylight. No bad smell. Took two small pills at 4 o'clock in the morning. Temperature 100. Pulse much less excited.

Diagnosis.—Tissue metamorphosis greatly diminished, as evidenced by decline in temperature, due to both carbolic acid and morphia, probably.

Prescription.—Tablespoonful Rochelle salts in a tumblerful of water in the morning. Milk and bread dinner.

Five o'clock P. M.—Patient dressed and sat up in an easy chair in her parlor. No pain or soreness left. Wanted a cup of tea and a little bit of steak for supper, which was given her. Case dismissed.

A CURE FOR HEADACHE.

By GEORGE KENNION, M. D., F. R. C. P.

I am desirous of bringing before the notice of the profession a very simple, and, at the same time, a very remarkable cure for many kinds of headache. I have not the least claim to the discovery of this remedy, nor, indeed, am I at all aware who was its originator; but I believe that it is unknown to the profession generally; and having used it for nearly twelve months in a very large number of cases, and very rarely without affording immediate relief, I am desirous of making it more generally known. I heard of it from a gentleman whom I was attending last year, and who told me that he thought it was used by a French physician. If this should come under his notice, I hope that it may be the means of inducing him to drop his incognito, so that he may receive the thanks of many to whom he has hitherto been an unknown benefactor.

The remedy, as I have already observed, is simple: it is the bisulphide of carbon in solution. Its mode of application is no less simple. A small quantity of the solution (about two drachms) is poured upon cotton wool, with which a small, wide-mouthed, glass-stoppered bottle is half filled. This, of course, absorbs the fluid; and when the remedy has to be used, the mouth of the bottle is to be applied closely (so that none of the volatile vapor may escape) to the temple, or behind the ear, or as near as possible to the seat of pain, and so held from three to five or six minutes. After it has been applied for a minute or two a sensation is felt as if several leeches were biting the part; and after the lapse of two, three or four minutes more the smarting and pain become rather severe, but subsides almost immediately after the removal of the bottle. It is very seldom that any redness of the skin is produced. The effect of this application, as I have said, is generally immediate. It may be re-applied, if necessary, three or four times in the day.

The class of headaches in which this remedy is chiefly useful is that which may be grouped under the wide term of 'nervous.' Thus neuralgic headache, periodic headache, hysterical headache, and even many kinds of dyspeptic headache, are almost

invariably relieved by it ; and although the relief of a symptom is a very different affair, of course, from the removal of its cause, yet no one who has witnessed (and who of us has not seen ?) the agony and distress occasioned by severe and repeated headache but must rejoice in having the power of affording relief in so prompt and simple a manner.

As regards the *modus operandi* of this remedy, it is difficult, perhaps, to form a certain opinion ; but I am disposed to attribute it to the sedative effect of the vapor of the bisulphile, absorbed through the skin, and acting upon the superficial nerves of the part to which it is applied. The remarks of M. Delpech point out very clearly the remarkable prostration of the whole nervous system produced in workmen who, in certain manufactures, are exposed to the vapor arising from a solution of the bisulphide of carbon ; and we can readily understand that a somewhat similar effect, upon a small scale, may be produced by the application of this vapor to a limited portion of the surface.—*British Medical Journal*.

PREVENTION OF SEA-SICKNESS.

By FORDYCE BARKER, M. D., New York.

The following suggestions for the prevention of sea-sickness were first written some years ago for a gentleman whose business required him to cross the Atlantic often, and who was always kept in his room by severe sea sickness during the whole voyage. By implicitly following the directions given, he has suffered very little from sickness, and has been able to go on deck by the second or third day, and has been entirely exempt from sickness for the remainder of the voyage. They have since been copied many times, and their value thoroughly tested. The trouble, however, is, that most persons do not appreciate how much easier it is to prevent sea-sickness than to cure it ; and so none but those who have before suffered will thoroughly carry out the directions, and, neglecting some of them, are disappointed in the results :

1. Have every preparation made at least twenty-four hours before starting, so that the system may not be exhausted by

overwork and want of sleep. This direction is particularly important for ladies.

2. Eat as hearty a meal as possible before going on board.

3. Go on board sufficiently early to arrange such things as may be wanted for the first day or two, so that they may be easy of access; then undress and go to bed before the vessel gets under weigh. The neglect of this rule, by those who are liable to sea-sickness, is sure to be regretted.

4. Eat regularly and heartily, but without raising the head for at least one or two days. In this way the habit of digestion is kept up, the strength is preserved, while the system becomes accustomed to the constant change of equilibrium.

5. On the first night out take some mild laxative pills, as, for example, two or three of the compound rhubarb pills.

Most persons have a tendency to become constipated at sea, although diarrhoea occurs in a certain percentage. Constipation not only results from sea-sickness, but in turn aggravates it. The reason has already been given why cathartics should not be taken before starting. The effervescent laxatives, like the Seidlitz, or the solution of the citrate of magnesia, taken in the morning on an empty stomach, are bad in sea-sickness.

6. After having become so far habituated to the sea as to be able to take your meals at the table and to go on deck, never think of rising in the morning until you have eaten something, as a plate of oatmeal porridge, or a cup of coffee or tea, with sea biscuit or toast.

7. If subsequently, during the voyage, the sea should become unusually rough, go to bed before getting sick. It is foolish to dare anything when there is no glory to be won, and *something* may be lost—*New York Medical Journal*.

PREVENTION OF SICKNESS FROM CHLOROFORM.—A writer in the *British Medical Journal* says that a few drops of chloroform in water, given as a drink to patients previous to being anæsthetized, effectually counteracts the tendency to vomit, which is so annoying an accompaniment to most operations. The remedy has at least the claim of simplicity, and deserves to be tried.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

THE SCIENCE AND PRACTICE OF MEDICINE. By WILLIAM AITKEN, M. D., Professor of Pathology in the Army Medical School, Edinburg. Edited by Meredith Clymer, M. D., with large additions. Second American from the fifth London edition, carefully revised and improved, in two large volumes. Illustrated. Philadelphia: Lindsay & Blakiston. 1898. [For sale by Frary, Cowan & Krath, book-sellers, St. Louis.]

No better evidence of the value of this great work can be adduced than that a second edition is so soon called for. The first American edition was out of print in little more than twelve months after publication.

The present edition, besides being thoroughly revised by the author, is edited with special reference to the wants of the American practitioner; it contains many additions to the author's text, and thirty-six new articles, several of them on subjects now introduced for the first time in any text-book on the practice of medicine. The new matter thus added by the American editor being equal to over five hundred pages of the London edition, comprising in part the following subjects:

Camp Measles; Spinal Symptoms in Typhoid Fever; Prognosis and Diagnosis of Typhoid Fever; Chronic Malarial Toxæmia; Pernicious Remittent Fever; Typho-Malarial Fever; Chronic Camp Dysentery; Cholera Morbus; Cholera Infantum; Hereditary Syphilis; Corpulence; Gonorrheal Rheumatism; Delirium of Inanition; Chronic Alcoholism; Epidemic Cerebro-Spinal Meningitis; Progressive General Paralysis; Acute Centripetal Paralysis; Myo-Sclerotic Paralysis; Physical Diagnosis of Diseases of the Cerebro-Spinal System; Auscultation in Health and Disease; Irritable Heart; Disease of the Heart, how far a Disqualification for Military Service; Chronic Pyæmia; Capillary Bronchitis; Plastic Bronchitis; Dilatation of the Bronchi; Sclerosis of the Lung; The Inoculation of Tubercle; Curability of Consumption; Acute and Rapid Phthisis; The Neuroses of the Larynx; Medication of the Throat and Lungs by Atomized Fluids; Syphiloma of the Liver; The Neuroses of the Stomach; Addison's Keloid—Scleriosis; Statistics of Tracheotomy.

Dr. Aitken's work is truly styled the "Science and Practice of Medicine," and deservedly stands at the head of all modern

works on the subject. The author has justly aimed at giving as fully and faithfully as he could the ideas and the views of the more advanced and able writers of the present time, being ever desirous that his work should be a "representative book" of the medical science and practice of the day, as actually understood and followed by the best men of the profession. The American profession are under deep obligations to Dr. Clymer for his ability in adapting the work to American practice, as well as for the large and valuable additions, which of themselves almost constitute a volume.

We can but repeat our former commendations, and unqualifiedly recommend it to our readers. The publishers, Messrs. Lindsay & Blakiston, have issued the work in their best style, which is unexcelled. Price, in cloth, \$12; in leather, \$14.

ON CHRONIC BRONCHITIS, especially as connected with Gout, Emphysema and Diseases of the Heart. Being Clinical Lectures delivered at the Middlesex Hospital, by E. HEADLAM GREENOW, M. D., Fellow of the Royal College of Physicians, Consulting Physician to the Western General Dispensary, &c., &c. Philadelphia: Lindsay & Blakiston. 1898. [For sale by Frary, Cowan & Krath, St. Louis.]

The purpose of this volume is to demonstrate the frequently constitutional character of chronic bronchitis, and its intimate association with many other diseases, in the relation either of cause or of consequence.

In the earlier lectures the author has endeavored to show, from the results of a large analysis of cases, and also from the history of many individual cases, in how small a proportion of bronchitic patients the liability to suffer from chronic bronchitis can be traced exclusively to catarrh, and in how large a proportion it can be referred to catarrh only in connection with one of three internal predisposing causes: namely, long standing mechanical irritation of the bronchial membrane, some form of dyscrasia, or previous illness of some other kind. The gouty dyscrasia is shown to be, of all others, perhaps the most fruitful source of chronic bronchitis. The fifth and sixth lectures deal with the subject of pulmonary emphysema; showing from an analysis of cases, and also from detailed cases, that emphysema is frequently hereditary; that it is frequently found in connection with the gouty dyscrasia; and, lastly, that it is not unfre-

quently developed, in these circumstances, previous to the existence of chronic bronchitis. These facts, in the author's opinion, prove the mainly constitutional character of pulmonary emphysema, and lead to the further conclusion that the degeneration of the tissue of the lungs which predisposes them to yield to mechanical causes of distension, in coughing or otherwise, is often a result of the gouty dyscrasia. In the seventh and eighth lectures, the relations between bronchitis and diseases of the heart are fully considered. Bronchitis is shown to be a frequent sequel to diseases of the left side of the heart; whilst it is, on the other hand, itself a direct cause of disease of the right side of the heart.

The practical conclusion suggested by the work is, that the first step towards the successful treatment of chronic bronchitis must be the discovery and, in so far as may be possible, the removal, or alleviation, of the internal condition which, in so many cases, is the remote cause of the patient's ailment.

The work is so fully up to the present state of medical science, and the diseases treated of so great importance, that no physician can well afford to do without it. We most cordially recommend it to our readers. Price, \$2 25.

THE USE OF THE LARYNGOSCOPE IN DISEASES OF THE THROAT. Second edition, with additions, and an Essay on Hoarseness, Loss of Voice, and Stridulous Breathing in relation to Nervo-Muscular Affections of the Larynx. By MORELL MACKENZIE, M. D., Physician to the London Hospital for Diseases of the Throat, etc., etc. Edited by J. Solen Cohen, M. D., and illustrated by two lithographic plates and fifty-one engravings on wood. Philadelphia: Lindsay & Blakiston. 1889. [For sale by Frary, Cowan & Krath, St. Louis.]

This is a valuable book in the use and application of the laryngoscope, and, owing to the great experience of Dr. Mackenzie with the instrument, stands deservedly at the head of all works on the subject. It seems strange that it was not until the middle of the last century that an instrument was invented for examining the lower part of the throat during life, and that even then, until within the last few years, that any practical use was made of such invention. But now that its application is so fully known, it has become a most valuable aid in diagnosing all diseases of the throat and larynx. The appearance of a second edition of this work in England lately has required of the

American editor a new and enlarged edition. There is also incorporated in the present work the author's recent Essay on Hoarseness, Loss of Voice and Stridulous Breathing, and some other notices of diseases of the vocal organs. There is also added some explicit instructions with regard to the manipulation of laryngeal instruments, and the diseases in which the same may be employed to aid in their diagnosis and treatment. The work is elegantly illustrated, and in every respect full and complete. The reputation of the American editor, Dr. J. S. Cohen, who has made many valuable suggestions, will add much to its value, as well as our willingness to recommend it to our readers. The publishers have presented it in their usual elegant style. Price, \$3.

CLINICAL LECTURES ON DISEASES OF THE URINARY ORGANS. By Sir HENRY THOMPSON. Illustrated. Philadelphia: Henry C. Lea. 1889. [For sale by Frary, Cowan & Krath, St. Louis.]

This is a compendium of the author's lectures, delivered at the University College Hospital, London, and previously published in the *Lancet*, now systematically arranged, so as to place the subject fully before the reader. The various diseases and methods of cure, both medical and surgical, of the urinary organs are illustrated in that plain, practical style for which the author is so justly celebrated.

The lectures on stricture of the urethra and retention of urine are particularly interesting. To the surgeon the book is especially valuable, and we take pleasure in recommending it to our readers.

SUPERSTITION AND FORCE, ESSAYS ON—THE WAGER OF LAW—THE WAGER OF BATTLE—THE ORDEAL—AND TORTURE. By HENRY C. LEA. Philadelphia: Henry C. Lea. 1888.

This is one of those rare and valuable books, the result of long and earnest study and research. Its aim is to group together facts, so that they may present certain phases of human society and progress, which are not without interest for the student of history and of man. As a work of curious inquiry on certain points of obsolete laws and customs, it contains facts which could only be found by searching numerous volumes. To the historical student especially will Mr. Lea's

work be useful, while to the general reader much valuable information can be obtained from its pages.

PRONOUNCING MEDICAL LEXICON. Containing the correct pronunciation and definition of terms used in medicine and the collateral sciences, also containing abbreviations used in prescriptions, and list of Poisons and their Antidotes. By C. H. CLEVELAND, M. D. Eleventh edition. Philadelphia: Lindsay & Blakiston. 1868. [For sale by Frary, Cowan & Krath, St. Louis.]

We can only speak in the highest terms of this really valuable little book. Compact, yet comprehensive, and just the thing to be kept constantly on the physician's table for ready reference. The present is a new and improved edition. Price, \$1 25.

THE PHYSICIAN'S DOSE AND SYMPTOM BOOK. Containing doses and uses of all the principal articles of the *Materia Medica* and *Official Preparations*. By JOS. H. WYTHES, M. D. Eighth edition. Philadelphia: Lindsay & Blakiston. 1869. [For sale by Frary, Cowan & Krath, St. Louis.]

The favor with which this little manual has been received, and the large number of copies sold, is evident proof of its utility and value. It gives the doses of all the articles of medicine used, and offers in a compact and convenient form much valuable information, especially useful from the easy and ready manner of reference. Every one will be pleased with it. Price, \$1.

WARM CLOTHING.—In choosing a warm dress, get it as light as you can. Think how lightly animals which have to endure great cold are clothed. What is lighter than feathers or fur? A bear can thus teach us a lesson of civilized science, and a goose can impart wisdom. For warmth, weight is needless, and for equal warmth it is a positive hindrance, since a heavy dress adds the heat of pressure to that of protection to those most prominent parts of the figure upon which it rests. And when you wish to be protected from wind as well as cold, wear under or over a woollen or furry fabric the thinnest impervious texture you can get. Then you have an arrangement similar to that with which the animals of cold climates are provided, viz.: thin skin and thick feathers or hair.

MEDICAL REPORTER.

ST. LOUIS, FEBRUARY 1, 1869.

The Health of St. Louis.—It is a source of congratulation to all that the health of our fair city has been so unprecedentedly good for the last six months. Whatever may be the cause, whether from the activity of the Board of Health since the cholera epidemic, or the fact of that epidemic itself, nothing in the form of disease has prevailed—nothing but the mere accidents to health, which common prudence might have obviated. If this state of things remain much longer, say the doctors, what shall we do to live? It is unfortunate that a profession should be which subsists on “the ills to which flesh is heir;” or, rather, unfortunate that mankind is as it is, to be infirm at all. However, let us rejoice that poor humanity has some respite from its sufferings, and that while so few are dying the ratio of increase in the population is so much the greater.

There has been only one alloy to our perfect happiness in this unwonted condition of the city—the rumor of smallpox in the neighboring cities of Cincinnati and Chicago, and the apprehension that the few cases which have straggled into our midst may give rise to the disease here. But several weeks have glided by under this apprehension, and we are yet free, thanks to our perfect health, not to the precaution of vaccination; for our vaccine virus has run out, and the unprotected are subjected to any risk that may chance to arise.

We do not know why physicians, who are, at certain seasons, always approached by the public for this very purpose of vaccination, or revaccination, should be so frequently unprepared to meet the demand, which is sure to come. The very excellent plan proposed by the health officer should be met most cordially by the profession, and if so, there need be no hesitancy as to the use of the virus so obtained; further than that, an occasional return to the original virus from the cow should be made by the proper official, and in this way a full supply would always be had; or another plan has been proposed, to refer all our

patients to one individual (in part, if not entirely, a member of the profession), whose duty and interest it would be to keep constantly on hand a sufficient and pure supply of the virus.

But there need be no trouble about the matter at all if each physician took care of his own supply from season to season. Among the various methods resorted to to preserve vaccine virus, we know of none better than the old fashioned one of hermetically sealing it with wax. It has answered our purpose when, in numerous instances, we have seen others fail.

*Messrs. Frary, Cowan & Krath, Booksellers and Stationers, No. 219 North Fifth street (successors to Keith & Woods).—*We were much pleased with a visit to the establishment of the above firm. The reputation of the house (one of the oldest book houses in the West) is too well known to require additional indorsement. They have a large stock of medical, scientific and miscellaneous books, which they offer at very low prices. In the way of medical works, they have all the new books noticed in the *REPORTER*, which they offer at publishers' prices. We most cordially recommend the firm to our friends for their patronage. Orders by mail will be promptly and faithfully executed.

Bdellatomy.—A curious practice lately introduced in Germany is the cutting of the leech, so that the blood will flow out of his body as fast as he sucks it from the patient. An ounce, or even two ounces, may be drawn in this way by a single leech. The spring lancet is preferred, though a thumb lancet will answer. The incision is made in the side, the left side being preferable, and at the time when the leech has nearly filled himself, and just before he is ready to stop sucking. The wound is kept free from coagulated blood by a warm sponge, or even by injecting warm water into the wound. If from rough handling the leech falls off, it takes hold again without difficulty. The process has been named *Bdellatomy* (*bdella*, a leech). At first sight it looks like taking an unfair advantage of the animal, if not treating him cruelly. But it is probably just the reverse, as it affords him an opportunity to feast longer on his rich beverage, without giving any noticeable pain. If carefully kept in clean water, the same leech may be repeatedly applied, and incised at intervals of days or weeks.—*Exchange.*

T H E

St. Louis Medical Reporter,

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SOMETHING ABOUT CRYPTOGRAMS, FERMENTATION AND DISEASE.

By J. H. SALISBURY, M. D., Cleveland, Ohio.

If, in the scale of organic life, animals are regarded as higher than plants, then in the vegetable kingdom the algae and fungals of cryptogams may, in some respects, be considered of superior dignity to phœnogams; because, in those respects, the former approximate animals more closely than do the latter. For instance, in many cases in algae and fungi fecundation is performed by means of vitalized, independently moving cells, called spermatozoids, resembling in office and genesis the spermatozoa of animals. The vitalized spores (zoospores) seem to possess both an animal and a vegetable life. They move about freely and independently—like the cell animals—during the period of fecundation and that of organizing the spherical into the cylindrical cell, or its equivalent.

They, like animals, exhale carbonic acid. There is also a peculiar resemblance between their nitrogenized products and those of animals. Their office, like that of animals, is in the direction of disorganizing organic matter instead of organizing it.

Zoospores are spores which possess for a time animalcular vitality. They seem to have an animal as well as a vegetable life. These vitalized spores are supposed to be confined mostly to the algae. They are present, however, in a somewhat modified type in many of the fungi.

Spermatozoids are minute, spore-like bodies, originating from the protoplasm of the cell, like the zoospores, and possess a similar power of animalcular motion. They, in cases where they have been traced, are produced either in what is called an antheridium, and escape through a rupture; or from the endochrome of the spore cell. They perform an office similar to that of the spermatozoa of animals. They enter the spore cell or zoospore through a rupture, and impregnate the protoplasm or endochrome (the unimpregnated sporales of the spore cell). After the protoplasm is impregnated a new membrane is formed around it, closing up the rupture through which entered the spermatozoids.

There are various modes by which the sporales are organized into cells, after impregnation, which are described further on.

After the spermatozoids have performed the office of impregnating the spores and zoospores, they do not themselves vegetate and produce their species, but dry up, disintegrate and disappear. The spores make no progress, and retain their vitality but a short time, if separated from the spermatozoids; but if mixed with them they soon show manifestations of vegetation, and reproduce their species.

We have, therefore, in many cryptogams, spores vivified by being impregnated by bodies corresponding in their functions with the spermatozoa of animals, and to some extent in their genesis. The primitive and simplest form of all vegetable tissues is the simple cell, which is increased either by the division of the endochrome or by pullulation from the sides, as in the yeast plant.

A spore consists, in every case, of one or more cells, composed of two or more membranes, inclosing a grumous mass, or occasionally inclosed in an integument, which is itself composed of cells.

Germination takes place by the extension of one or more of the constituent membranes, and in general the point of growth is indifferent. This germination (tubular) either produces the plant directly, or gives rise to a membranous expansion of a peculiar form (or cushion-like swelling.—Prothallus) which in

due time bears the fruit. Spermatozoids in fungi, so far as known, have no flagelliform appendages. There is still, however, animalcular form and motion. Impregnation takes place immediately by simple contact, and not by means of a thread germinating from, as from a pollen grain.

In many fungals growth takes place from the tips of the threads of which they are composed.

The vital spore is formed by the union of the contents of neighboring cells.

Amongst algae and fungals will be seen apparent infusoria existing as mere vegetable organs; performing functions under a form which we may hunt for in vain among the higher vegetables.

Here occurs a form of spermatozoid closely resembling the impregnatory bodies in the higher animals. These spermatozoids are developed in perfect freedom, like the sporales within the mother cell, and not mere appendages attached to its walls. They are endowed with vital action, similar to that of the cilia so common to mucous surfaces.

The sporals are developed from the unorganized endochrome. The spores within are ascus, originate in the same way from the unorganized protoplasm.

Many of the diseases of both plants and animals arise from fungi and algae. There are two modes of propagation amongst algae and fungi; the one by zoospores and the other by inactive spores.

A tetraspore is a sort of bud-like spore. Propagation takes place by the simple division of the endochrome, by transformation of particular joints; by the metamorphosis of the endochrome into zoospores; by pullulation from the sides, as in the alcoholic or cell multiplication in the yeast plant; by minute zoospores or metamorphosed joints (confervaceæ) by large, active spores clothed with ciliæ; by large quiescent spores, and by the simple small spore arising from the subdivision of the endochrome.

Zoospores are formed in various ways; viz.: from a division of a secondary impregnated endochrome; from the union of

two endochromes in the same or contiguous threads; and from the division of a single primary endochrome.

Spores are also variously formed; viz.: by the conjugation of two distinct individuals (as in the diatomes); by the union of two or more endochromes in the same or different individuals; and by the division of a single endochrome.

The confervæ are propagated by minute zoospores or metamorphosed joints.

There is a class of growths much resembling the confervæ, which effect mineral solutions; and liquids impregnated to a greater or less degree with organic matter.

These are mere states of different moulds, which may occasionally be indicated in the act of bearing normal fruit. Nor should we include those merely colorless species which grow parasitically on dead or diseased animals; as they appear, notwithstanding the curious phenomena they exhibit, in producing zoospores, for they are really states of fungi. The spores in fungi are either produced naked or in utricles (asci).

The modes of fructification are: 1st, Sporophorous (by naked spores); 2d, Ascigerous (by asci containing sporidia); and 3d, Sporangia (by spore cases filled with spores).

FERMENTATION—ITS BEARING UPON DISEASE, ETC.

It is now well established that fermentation is a vegetable process; that certain plants of a low type are developed in fermenting bodies; and that the development of these plants is the cause and not a consequence of such fermentation. This vegetation is collectively known as the *yeast plant*, of which there appears to be considerable variety. Those exciting ordinary fermentation belong principally to the genera *cryptococcus*, *pennicillium*, *aspegillus*, *oidium*, *mucor*, *sphærothæcus*, etc.

There are many interesting phenomena connected with the various stages of development of these plants, with the peculiar and well-defined changes excited during particular stages of their growth, and with the means at our disposal for controlling their propagation.

The alcoholic or vinous fermentation marks that part of the

vegetative process which is expended in cell multiplication. As soon as filamentous development begins, the acetous fermentation is ushered in; and the formation of fertile threads and spores is attended by putrefactive fermentation. The yeast plant only becomes perfect—producing fruit—when it is in the act of destroying the last useful proximate organic product that is formed by fermentation.

Fermentation, then, is a process merely of vegetable development—a resulting condition of the growth of certain fungi and algae—a process of organization on the one hand and disorganization on the other.

These plants have three successive, well-defined stages in their development, each of which is marked by a particular kind of fermentative action. These are as follows: 1st—Cell multiplication, which produces the vinous fermentation, forming alcohol and analogous bodies. 2d—Filamentous development, or the formation of mycelia, which produces the acetous fermentation, forming acid; and, 3d—Reproductive development, or the formation of fertile filaments and spores, producing putrefactive fermentation, resulting in a destruction of the acid formed in the previous fermentative stage.

In confirmation of this, we may present the interesting fact that these fungoid plants, if transplanted into an amylaceous or saccharine matrix in their cellular or alcoholic stages of development, excite the alcoholic fermentation only. The acetous fermentation is only excited when these cells begin to unite and form themselves into filaments. If these plants are transplanted during their filamentous stage of development into saccharine or amylaceous matter, they only produce the acetous fermentation, without conducting the amylaceous or saccharine products through the intervening vinous stage. The same may be said of the mature plants. They only excite the destructive changes before mentioned. Here is a valuable, practical principle to be applied by the brewer and distiller. If yeast is so made that it contains plants only in the cellular stage of development, alcoholic fermentation alone will be excited.

If it contains plants both in the cellular and filamentous

stages of growth, both the alcoholic and acetic fermentations will be excited, and less alcohol will be the result. If it contains plants in all three stages of development, all three forms of fermentation will be excited, and the result will be destructive to quality of products and profits.

The valued beverages—such as wine, beer, whisky, brandy, &c.—are remarkable products of fermentation.

The ordinary mode of making bread, the production of vinegar, and all the changes which animal and vegetable substances undergo, as well as the manner of checking and preventing these changes, and thus preserving food from decay, also depend upon the principle of this process. Animal and vegetable substances are the only products capable of fermentation.

The changes which take place in mineral bodies depend on another principle, entirely distinct from that of fermentation.

There is a constant tendency for this principle to act upon diseased and dead tissues; and, in many instances, it attacks those which appear to be in a vigorous and healthy condition. Its operation is to disorganize organic matter, or to reduce its proximate compounds to more simple and readily decomposable forms. This change is called fermentation, decay or putrefaction. The products of it are oxygen, hydrogen, carbon, nitrogen, and their various simple combinations with each other, and with phosphorus and sulphur. The most of these are gaseous, some are liquid, and a few are solid.

Organic substances differ much in their tendency to undergo this change. All require moisture, air and a certain degree of temperature before they can come under its influence.

If deprived of any one or two of these, they are not influenced by this change; but, all being present, they fall the more or less readily, according to their nature and composition, under the influence of the principle which controls fermentation and decay. Woody fibres, oils, resins, &c., are preserved in the undecomposed condition longer than muscle, gluten, starch, sugar, gum, &c.

The complicated juices of plants, in which the various proxi-

mate principles are already mixed by nature, exhibit the finest specimens of fermentation, such as the sap of trees, the juices of fruits and vegetables, the decoction of leaves, seeds, &c. It is from such natural mixtures that we obtain all products of fermentation which mankind has applied to useful purposes.

The first stage is called the vinous fermentation, because it is that by which wine is produced; and it might, with propriety, be called the alcoholic stage, because through it alone spirit is formed, not only in wine, but in every other liquor containing spirit. The second stage is named the acetous fermentation, the result being acid; and the last the putrefactive fermentation, because putridity is the consequence.

These several stages usually follow each other in the order just mentioned. The vinous begins, and this, after a time, passes into the acetous stage, and this into the putrefactive.

There are but few of the proximate principles of vegetables which are capable of undergoing, properly, the vinous fermentation. The chief of these are starch, dextrine and sugar. This arranges vegetable matters into two classes: those which are capable of affording fermented liquors and those which are not.

In nitrogenous animal matters there are three stages in the fermentative process, although not as well marked as those previously mentioned. These may be called the ammoniacal, the acid and the putrefactive. During the first the body becomes strongly alkaline, and large quantities of almost pure ammonia are evolved. This is strikingly exhibited in the sweating process of sheep skins, by which the pores are opened and the wool rapidly separated. The skins are suspended thickly in a close, dark, warm, damp room.

In from twenty-four to forty-eight hours the room becomes so filled with pure ammoniacal vapors that it is almost impossible to enter it. These vapors are free from offensive smell. During this process the skins become loose, and the wool readily separates. This corresponds to the alcoholic fermentation in amylaceous matters.

During the succeeding stage of fermentation hydrosulphuric acid or sulphuretted hydrogen (which has an acid reaction),

mixed with sulphide of ammonium, are largely evolved; and, during the third stage, there is a general disintegration and escape of matter in a gaseous form; this is the most offensive stage in the process. All of these stages are grouped under the one head—putrefaction and decay.

The products of the process are: ammonia, sulphide of ammonium, phosphide of ammonium, phosphuretted hydrogen, sulphuretted hydrogen, hydrogen, carburetted hydrogen, nitrogen, carbonic acid and a black mould or humus. Whenever the human system becomes acid, or the acetous fermentation predominates so that the secretions become sour, there is a tendency to the arranging of cells in lines forming filaments or fibers. In other words, the fibrin cells have a greater tendency to become developed into filaments than under normal conditions. There is also a tendency for the filaments formed to contract and become aggregated. When this takes place, it produces a disposition in the blood to clot. These aggregated filaments, not being able to circulate freely through all portions of the capillary system, tend to clog up the minute vessels in the unyielding tissues. The capillaries of the bones, periosteum, cartilages and ligaments being surrounded by firm tissues, have little chance to expand freely, like the other tissues of the body, and consequently are less able to adapt themselves to the free circulation of suspended and aggregated solids. The result is, the flow of blood through them is impeded and checked by the aggregated masses of adhesive fibrin cells and of the excess of fibrin filaments, thereby damming up the little channels, producing local congestions and inflammation in these unyielding tissues. The pathological result, is that large class of abnormal conditions known under the names of rheumatic and gouty affections.

The primary causes may be as various as the abnormal states produced; yet the system is uniformly acid.

The primary causes are obscure. They all, however, result in one primary pathological condition; which is general or systemic acidity.

The acidity is the proximate cause of the local lesions and

derangements known as gout and rheumatism. Acidity always has a tendency to excite filamentous development in cells. It is not a normal or healthy condition, and is the pathological mark toward which—in the treatment of these diseases—we should aim our remedies.

When the acetous condition or fermentation has been excited, it is by no means an easy matter to control or check it. The first impression would be that this might readily be accomplished by the free use of alkalies. A more thorough knowledge of the fermentative processes will satisfy us that alkalies only neutralize the acids already formed, while it has little influence in checking the activity in the system of that development agency by which acid is constantly being formed. Alkalies are mere palliatives, neutralizing the acid as it is developed. To strike at the root of the difficulty, it is necessary to employ agents which will check the further formation of acid. Our knowledge of fermentative processes, and the means we have of controlling and checking them, happily comes to our aid in this crisis. Sulphur, sulphurous acid, and sulphuric acid, and the sulphites, are known to have a powerful controlling influence over fermentative processes. We also know that in some cases of obstinate sour stomachs, when alkalies have no influence, a few doses of dilute sulphuric acid will check this condition as if by magic.

We have here the secret; the rational.

It points us to the proper means for combating (acidity) the proximate cause of rheumatic and gouty conditions. Our first effort should be to check the further formation of acid; and, secondly, to neutralize the acid already formed in the system. The indications as to treatment are, 1st, Sulphuric or nitro-muriatic acid internally and by baths externally. (The sulphite of soda may be substituted). 2d, The free use of alkalies internally and externally to neutralize the acids already formed. This should be followed by the vegetable bitters, which impart a prophylactic impress upon the gland cell system. To check the formation of glucose and acid in the juice of the cane, the sugar manufacturer drops in a little sulphuric acid, or sulphite of soda,

or sulphite of lime, as soon as the juice is expressed. This prevents the formation of bodies which check the crystallization of the sugar. The wine manufacturer burns sulphur in his casks to control the fermentative process, and prevent the formation of acid.

Many of the changes going on in the human organism, connected with digestion and assimilation, belong, or are allied, to fermentative processes.

Every observing physician is more or less familiar with the peculiar irritability which is produced in the mucous membrane of air passages by the free use of organic acids.

They are also familiar with the peculiar sour condition of the system in rheumatic and gouty diseases, and in tubercular states of the organism. The acid condition is so strong that it can often be detected by the odor of the body. This condition is often produced by the too free use of organic acids; at others by functional derangements, by which there is a tendency to transform too much of the food into the acid. In such states of the system all amylaceous and saccharine food should, as much as possible, be avoided. Physicians are more or less familiar with the fact that often acid conditions of the stomach resist all alkaline treatment, yet are permanently cured by small doses of the mineral acids. Farinaceous or saccharine food increases this acidity, which shows that it is a fermentative process. Here, then, we have a familiar illustration of the efficacy of the use of acids in correcting acetous fermentation in the human system. Alkalies are only temporary reliefs, acting merely as neutralizers to the acids already developed, while sulphuric acid, or the soluble sulphites, remove the cause, precisely as they do in the wine cask, the mash tub, the mass of dough, or in the evaporation of saccharine juices in the manufacture of sugar. We may regard many diseased conditions but little more than results brought about either by the various processes of fermentation, modified by vitalizing influences, or by the too free use of organic acids. The system of the drunkard is often acid. He turns his system frequently into an apparatus for manufacturing vinegar; when he becomes a rheumatic and gouty subject.

ON ATROPIA AS A THERAPEUTIC AGENT.

By O. F. POTTER, M. D., Professor of Materia Medica and Medical Botany in St. Louis College of Pharmacy.

This valuable, yet powerful therapeutic agent, the active principal of the atropia belladonna, has of late been prominently brought before the profession, especially since the introduction of the hypodermic syringe, and from the number of fatal mistakes resulting from its over or accidental use, it behoves the practitioner to pause and consider well his case, and the necessity requiring its use before administering so potent a drug. Atropia, as it occurs in the shops, is in silky, prismatic, acicular crystals, which, when pure, are colorless, but, as obtained, are usually of a yellowish white color, inodorous, and has a bitter, acid taste.

The sulphate of atropia is the form in which it is usually prescribed, owing to the salt being soluble in water, while the alkaloid is only slightly so. The effect of the salt on the system is precisely the same as that of atropia, and may be used in the same dose.

The effects of atropia are precisely those of belladonna, only that they occur more promptly, owing to its greater facility for absorption. It is a powerful narcotic, and also diaphoretic and diuretic.

In small doses it produces dryness of the fauces, with slight uneasiness or dizziness of the head, and sometimes more or less dimness of vision.

In increased doses the pupil becomes dilated, and there is headache, great giddiness, partial delirium, pain in the abdomen, spasms, with violent gestures. The pulse becomes feeble, the extremities cold, and finally deep coma, resulting in death.

The effect on the nervous system is at first painful, followed by a feeling of intoxication, with a buzzing noise in the ears. The sight becomes confused, spectral illusions appear, generally of a vivid and pleasing character.

The muscular system is affected in much the same manner as by intoxication from alcohol, an unsteady and uncertain movement, with occasionally more or less paralysis. The action of the heart is sensibly affected. The pulse at first becomes slower,

then more frequent, bounding and full. Sometimes it is intermittent and irregular.

Atropia has been recommended in various complaints, as neuralgia, rheumatism, epilepsy, spasms, asthma and paralysis. In neuralgia and muscular rheumatism it is generally administered hypodermically, and when thus used the utmost caution should be observed.

When administered internally, it should be given in solution, and at first not more than one-twentieth of a grain two or three times a day, although one-twelfth to one-sixth of a grain is often used, but as alarming symptoms have arisen from even one-thirtieth of a grain, the physician should watch with the utmost care its effect in each individual case.

For hypodermic use not more than 1-60th of a grain should be used at first, or even less. Dr. Eulenberg relates a case where 1-48th of a grain was injected, and alarming symptoms of poisoning soon appeared. And another case is related by Dr. Lorent, where less than the 1-100th of a grain used hypodermically produced alarming results.

From the resemblance of artropia to morphia, frequent mistakes have arisen, some fatally, therefore too much caution can not be observed in prescribing and handling this virulent drug.

My friend, Dr. Thomas Fox, assistant physician at the Quarantine Hospital, sent me the following account of a fatal case occurring at the hospital which was the result of accident, thus further impressing the great importance of extreme care in the prescribing of this remedy.

"John Allen, aged 50 years, suffering from chronic bronchitis, with disease of heart, took, by mistake, a solution containing one grain of atropia at one dose, which was prescribed for another patient and left on his stand by mistake of the person whose duty it was to distribute the prescriptions. Calling the attention of another patient to the mistake, he was told to make it known 'to the Doctor,' but remarked that 'it would do him no harm.' It was, as near as I could ascertain, an hour before he complained of being ill, and twenty minutes later before I was made aware of the mistake. He at first complained of cramps

and pain in the bowels, loss of power in the lower extremities, vertigo and dimness of vision. In the meantime the Apothecary had given him an emetic of ipecac without emesis being produced. When first seen he was in an insensible condition, paralytic, surface cold, dilated pupils, face of a purple hue, foaming at the mouth and nose, unable to swallow, pulse 108 and very weak, and in a few minutes it failed at the wrist altogether, respiration slow and spasmodic. Stimulants were given by enema, but from relaxation of the sphincter ani, were not retained. A tube was inserted into the trachea and the action of the heart maintained by artificial respiration and electricity for two hours, when its action entirely failed and death ensued."

In case of poisoning from atropia it is usually recommended to speedily administer an emetic or use the stomach pump. Tannic acid and a solution of iodine in iodide of potassium, also animal charcoal, has been proposed. There has also been numerous experiments instituted to demonstrate that there exists an antagonism between belladonna and opium, and that the active principle of one is an antidote to the other. Numerous cases have been given where favorable results were obtained on this supposed power. Dr. W. F. Norris has published a table of the reports of nine cases of poisoning by opium treated by the use of belladonna, and of some eighteen of poisoning by belladonna, treated by opium, which were generally successful. The unsuccessful cases being only these where the antidotes were too sparingly used.

Dr. Thomas Fox has furnished me with the following case, also occurring at the Quarantine Hospital, which would go far to prove the remedial power of morphine in case of poisoning by atropia :

"John Dunn, under treatment for iritis, was prescribed for as follows: *R*—Morphia sulph., grs. j; aqua. 3i; *M*—ft. sol.; teaspoonful every two hours. *R*—Atropia sulph., grs. j; aqua 3ss; *M*—ft. collyria; one drop in eye twice a day. He was cautioned in regard to the danger of a mistake from the similar color of the solution. But notwithstanding this, and thinking, as patients often do, 'if a certain amount will relieve, a greater amount will cure.'

He took, at one dose, the solution of atropia, mistaking it for morphine. In about 25 minutes he was seized by vertigo, ineffectual attempts at vomiting, difficult deglutition, dryness of the fauces, dilatation of the pupils, loss of vision, face suffused and livid, followed by loss of power in the lower extremities, becoming at last furiously delirious, pulse slow and weak, respiration frequent and laborious. He was treated by morphia in 1-8th gr. doses, repeated every ten minutes until the symptoms of delirium were controlled. Under its use the pulse increased in force and frequency. He dropped into a quiet sleep, from which he emerged without a bad symptom."

Dr. E. A. Clark, Physician to the City Hospital also reports two cases in the *Medical Archives*, which prove almost conclusively that each may be used successfully as the antidote to the other.

The first case was that of a boy who was suffering from chronic rheumatism, and who had, by mistake, taken 1-8th of a grain of sulphate of atropia instead of sulphate of morphia, which was ordered to be injected hypodermically. In some ten minutes he gave unmistakable signs of poisoning of a very serious nature. He was then treated with sulphate of morphia in fourth of a grain doses, when the symptoms readily yielded. Only four doses were required to effect a complete cure, and in some six or eight hours he was entirely relieved from all unpleasant effects. This, and the case of Dr. Fox, appear to prove the value of morphia as an antidote to atropia. Dr. Clark's second case is also important on account of the reverse of the use of the drugs. In this case a man took an ounce of tincture of opium at a dose to check a persistent diarrhœa. Here resort was had to hypodermic injection of 1-48th of a grain of atropia, and only three doses were injected, which resulted in the complete recovery of the patient, with no unpleasant results.

These cases would appear almost conclusive of their mutual antidotal properties, and at least would indicate the propriety of a resort to the use of the one in all cases of poisoning by the other. Yet be it at all times done with the utmost care and caution, least

the antidote may cause that which we are seeking to prevent, the death of the patient.

Drs. Mitchell, Keen and Morehouse, of Philadelphia, have performed a large number of experiments to test the mutual relations of atropia and morphia administered by sub-cutaneous injection, and they came substantially to the following conclusions:

"1. Atropia does not lessen pain, but morphia does, and all the more efficiently the nearer to the seat of pain it is injected, at least in cases of neuralgia. 2. Morphia does not lower the pulse, but atropia, after rendering it less frequent, accelerates it very perceptibly. 3. Morphia does not counteract the action of atropia upon the pulse. 4. The two agents are mutually antagonistic in their action upon the iris, but that of atropia endures the longest. 5. The cerebral symptoms caused by either drug are, to a great extent, capable of being overcome by the other, but owing to the different rates at which they move to effect the system, it is not easy to obtain a perfect balance of effects; and this is made the more difficult from the facts already mentioned, that atropia has greater duration of toxic activity. 6. Morphia does not prevent the dryness of the mouth caused by atropia, nor does atropia prevent the nausea caused by morphia. 7. Atropia relaxes, morphia constipates the bowels. 8. Dysuria is caused by both, and when so produced, is not relieved by either. 9. Atropia does not alter or lessen the anodyne effect of morphia in neuralgia. 10. In their toxic effects upon the cerebral organs they are antidotal; but this antagonism does not prevail throughout the whole range of their influence."

From the above deductions, many of which I have myself verified in my own practice, it can reasonably be stated that while a certain degree of antagonism really exists between the two agents on some points, in others they coincide, or are indifferent to each other. Therefore it would be unsafe to rely upon either exclusively in poisoning by the other, although they may be employed to meet certain indications against the other, and should, in every instance of poisoning, be resorted to as one of the means for recovery.

The above paper has been prepared in answer to several letters of inquiry on the use of atropia, and is especially designed as a caution against the careless use of a remedy which, while it may be used successfully as a curative agent, still can be productive of fatal results if improperly administered. Like strichnia, brucia, and others of the alkaloids, atropia is a most valuable agent in experienced hands.

ON THE USE OF SARRACENIA PURPUREA IN THE TREATMENT OF VARIOLA.

By WM. ELLIS GLENN, M. D., Rolla, Mo.

The attention of the profession was directed, a few years ago, to the employment of *sarracenia purpurea* in variola. The efficacy of the drug was stoutly maintained by two reliable physicians in Canada, each claiming priority in its use and introduction to the notice of the medical profession. Upon theoretical grounds, Professor Wood denies any virtue in it for the cure of small-pox, as also do a few other writers, and I do not presume to offer ideas differing so radically from so eminent therapeutists; but I desire to present a few remarks and a simple statement of a practical experience in its use.

In the early part of the spring of 1865 a very severe and malignant form of confluent variola made its advent amongst the soldiery in Rolla, at that time a large military post. For several weeks it was confined to the military, but ultimately it spread to the citizens of the town with such violence and fatality that panic seized the community, and all who could left or moved their families into the country into tents and such houses as could be procured beyond the reach of its ravages.

About the first of June I was appointed health officer of the town, and at once took measures to check the growing epidemic. A hospital was established two miles from town, and all affected with variola, without distinction, were moved thither. The fatality was very great, especially amongst the negroes, in whom the ordinary treatment availed but little. Any remedy that could mitigate, if not abate, the virulence of the epidemic

was a boon greatly desired, and difficult to find, when I thought of trying the *sarracenia purpurea*. In clutching at this straw I anticipated but little success, rather "hoping against hope."

I procured some of the leaves of the plant (the root could not at first be obtained) from St. Louis; but a few trials demonstrated its utter valuelessness. Finally I obtained from New York the root (rhizoma), and prescribed it at once as recommended.

To my gratification and surprise the severity of the disease began very perceptibly to decline in those to whom it was administered, while it continued as bad as ever amongst those not taking it. Encouraged, I gave it to all in the hospital, and was highly gratified to discover that its efficacy as a remedial agent was undoubted—that it was no happy chance or coincidence which marked the recovery of those first taking it. It at once became *the medicine par excellence* in the hospital, and from that time not a case was lost but one, an infant four days old.

Its administration was in decoction, one ounce of the bruised root to the quart of cistern water; dose, half a teacupful every four hours. Other and auxilliary treatment, of course, was not eschewed, but employed as symptoms or circumstances required.

From the case book I quote three cases, which may be taken as types of the rest:

CASE I.—Mrs. J—M—, aged 20 years; lymphatic temperament; admitted June 23; had confluent variola; had been vaccinated a week before admittance. Treatment, the usual supportive. 29th—Hands and face very much swollen. July 3d—Secondary fever set in; case not progressing favorably. Tuesday, 4th—Gave *sarracenia purpurea*. Wednesday, 5th—Somewhat easier. 6th—Much better; fever gone; not so hoarse; said she "felt the disease was dying in her;" continued administration in somewhat smaller doses. July 18th—Cured.

CASE II.—F. H. L—, livery stable keeper, aged 45; admitted June 21; confluent variola; never had been vaccinated; inclined rather to intemperance; of full habit. Put him under

supportive treatment. Severe secondary fever set in July 5th; ordered *sarracenia purpurea*. 7th—Expressed himself as much relieved. 8th—Improving. 9th—Fever high; not so well; increased dose of *sarracenia purpurea*. 10th—much better; appetite good. 11th—Still improving; no fever. 21st—Cured.

CASE III.—R—C— (colored), aged 27; was never vaccinated; admitted July 6th with confluent variola; irruption very thick on face and body when admitted; had been confined three days previously of male child, which was similarly affected, and died the day following admission; lochial discharge very scanty. This was a very aggravated case. Exposure, inferior diet, along with her confinement, had enfeebled her so as to render her utterly helpless. Her face presented an immense mass of loathsome purulency, and even of ulceration. Her intellect obscured, and, in this thphoid state, half comatose, debilitated, and almost moribund, she was received at the hospital a few hours before my morning visit.

In reporting the case, the matron said that she "knew the woman would certainly die," for, to use her homely expression, "she had the same smell that all those who died had" before death.

I hardly expected any good in this case; still the decoction was prescribed. This was the 6th. Next day symptoms were no worse. 8th—Better; quite rational. 9th—Improving. 10th, 11th and 12th—Still mending. 15th—Out of danger; and 31st—Discharged, cured.

This case incontrovertibly sustained the curative power of the drug in my hands; it was the most unpromising we had, for, if I mistake not, variola under such circumstances is almost always fatal. Besides these cases, many others were treated similarly who are living witnesses to its value.

Of the *modus operandi* of the agent I am ignorant. I merely present my experience of its practical employment, with the simple statement of facts authentic in every particular.

As a therapeutic agent I consider it to be indicated in variola—modified, distinct or confluent; and, after a fair test of the remedy during a very malignant and wide-spread epidemic, I

am of opinion that *sarracenia purpurea* is as much a specific in, as vaccination is a prophylactic against, variola.

By the first of August the epidemic entirely disappeared from Rolla.

REPORT OF A CASE OF INFANTILE GONORRHŒA, OR LEUCORRHŒA, SUPPOSED TO BE PRODUCED BY RAPE—IMPORTANCE AND DIFFICULTY OF DIAGNOSIS IN A MEDICO-LEGAL POINT.

By WAYNE GRISWOLD, M. D., Circleville, Ohio.

Called to see Fanny Moore, August 16, 1866; aged five years and two months; found her up and about the house; middling fleshy; strumous habit; light hair, eyes and complexion; large chin, mouth and nose, for a child; blue veins visible in marble forehead. Mother died with pulmonary tuberculosis when the child was a little over two years old; child had mother's constitution. Was given to Mrs. J. by the child's mother on her deathbed. The child had most excellent care up to this date. I found the mother excited, and in great trouble. Said "the father had ruined the child, and had given it the bad disease, and she would not be disgraced by having the child in her house any longer." Upon examination I found the entire vulva in a state of active inflammation, with a free muco-purulent discharge. There was considerable burning pain on the passage of water, and some smarting pain of the parts when walking. The entire vulva was very red and somewhat swollen, especially the internal labia and meatus urinavis.

There were a few specks, a little more injected with blood, not fairly amounting to ecchymosis. The acrid secretions had irritated the external parts some, a little beyond the external labia. There was no absolute contusion of parts, no rupture—not even of vessels; no appearance of blood; the hymen was intact and natural.

The inflammation did not seem to extend up the vagina far, and I could not discover the least difference between this case, in all its local symptoms, and several cases of leucorrhœa I

have treated in scrofulous children, only that it seemed a little more violent than ordinary cases.

Treatment.—Rest, moderate diet, cleanliness, cooling astringent lotions, a mild anodyne and alterative at night. The inflammation and discharge were checked in a short time.

About the seventh day from the time I first saw her she took a chill and fever. She had been subject to occasional attacks of chill and fever, attended with convulsions sometimes; otherwise had generally been healthy. All the ordinary tonics, especially quinine, failed to arrest the chill; it would return regularly every day, with hectic flush after. Soon began to discover a little dullness over the upper part of the chest, with hurried respiration, rapid, weak pulse, general debility, some cough, indifference to eating, some tenderness over bowels. She became quite indifferent—not only willing, but rather anxious to pass out of her troubles.

She was precocious in intellect and body, possessing more than usual understanding for her age. Every means was used that we could command to arrest constitutional tuberculosis. Good, free nourishment, cod liver oil, syrup, iodide of iron, hypophosphates, and various remedies. Several excellent physicians saw the case in consultation, but she steadily failed, and died in about eight weeks from the attack.

Post Mortem.—Drs. Griswold, Turney, Wilder and Jones present—twenty-four hours after death.

Lungs.—Plenty of miliary tubercles in upper part, some in a state of suppuration; some of the large bronchial glands tuberculous, with calcareous deposits. Also, some tuberculous matter in the lymphatic glands or bowels. We found what is frequently the case in strumous children: extensive, fatty degenerations, especially of cavity of heart, and large vessels connected.

I believe we seldom find, in fatal tuberculous consumption in young children, the quantity of tubercles in the lungs that we expected, but far more fatty degeneration.

There are two points of peculiar interest in this case:

First—The father was accused of committing a rape upon this

From the Report of a

Case of Infantile Gonorrhœa or Leucorrhœa. 777

~~in The Sp. Louis Med. Reports~~ ~~we mistake~~
child on the Sunday before my first visit; was tried for the crime in the Piqua county court, Ohio, found guilty and sentenced to State prison for life. After serving some time, he was remanded back by the Supreme Court for a new trial. The court, on his confession of an assault, sentenced him again to seven years' imprisonment, without trial.

The second, and very important point in the case, was one of diagnosis between gonorrhœa and leucorrhœa. Perhaps there are no two diseases more difficult to make a positive diagnosis of, whether in infants or adults. Although cases frequently occur where crime is involved, or accusations of crime, that renders an absolute diagnosis important, yet there are, after all, doubts in many cases that may lead witnesses, judges and jurors into error; and, in a medico-legal point, there are few questions of diagnosis requiring more careful study on the part of the medical witness.

The very highest authorities have felt the same doubts.

Hunter says: "It is not so easily known in women as in men, because the parts commonly affected in women are very subject to a disease resembling the gonorrhœa, called *fluor albus*; and the distinguishing marks, if there are any, have not yet been completely ascertained."

Ricord and Brumstead both agree with Hunter.

Tanner says: "But neither in the actual condition of the parts, nor in the symptoms, do we find anything by which positively to distinguish an inflammation due to ordinary causes common to the most chaste female, from that which is produced by the specific discharge of a clap."

He farther warns practitioners to be on their guard against compromising innocent individuals in cases of infantile leucorrhœa, by attributing the discharge to gonorrhœal infection, or violence in attempting a rape.

Bennett says: "I am bound to confess that the only difference I can see between the two is, that vaginitis, apparently contracted by contagion or blennorrhagia, appears to be more acute than ordinary vaginitis."

The following extract

Taylor, Wood, Wilde, and others, give us many interesting cases of infantile leucorrhœa, where parents and guardians have accused innocent parties of rape.

I give a condensed statement of the medical testimony summoned in the case—of Dr. Turney, summoned by the plaintiff, and of Dr. Griswold, summoned on behalf of defendant :

DR. TURNEY'S TESTIMONY.

Saw and examined Fanny Moore, with Dr. Griswold, August 16, 1866. Child looked tolerably well. Found all the internal surface of vulva inflamed, some swollen, and covered with a free discharge of muco-purulent matter; some parts redder than the general inflamed surface, not amounting to ecchymosis; not much evidence of great violence; no contusion, no laceration. Examined stains on a cloth taken from the child on Wednesday, with microscope; detected blood and pus corpuscles. Examined the father, with Dr. Griswold, while in jail. He denied having clap, yet we could squeeze pus out of urethra. Thought anything that reduced the child would hasten tuberculosis. Thought it very difficult to diagnose an ordinary vaginitis from one caused by contagion or clap; but, taking into consideration the circumstances, that we found pus in urethra of the father, and a free discharge of matter from vulva of child, he was inclined to the belief that the child had gonorrhœa.

Gonorrhœa will generally be developed within five or ten days from exposure; may come sooner.

DR. GRISWOLD'S TESTIMONY.

Called to see Fanny Moore, Thursday, August 16, 1866. Found her up and about the house. Examined external organs of generation and found them in a state of active inflammation, with some swelling, and burning pain, especially upon passing water; a few dark red specks, not amounting to ecchymosis. There was a copious muco-purulent discharge from the whole inflamed surface. There were no blood stains; no contusion or laceration; no positive evidence of an attempt to penetrate the vagina. The hymen was intact. Also said that the inflammation and discharge of infantile gonorrhœa and leucorrhœa were

very similar; that it would be very difficult to distinguish them apart, and that scrofulous children were liable to infantile leucorrhœa; had seen and treated a number of cases. That Fanny Moore had a marked scrofulous constitution, which she inherited from her mother. Could not say positively that the case was gonorrhœa. Could not say that the local disease caused tuberculosis. Anything that reduced the system would tend to develop the disease. Thought the change from a fine home with excellent care to a home with strangers and hired nurses had a bad effect on the child. Father had gonorrhœa, and might have given it to the child; contact with vulva of the child would be likely to produce it.

Gonorrhœa might come on within a day of exposure, but usually within five to ten days.

A CASE OF PROFUSE HÆMOPTYSIS AND INTERCURRENT PNEUMONIA, ENDING IN DEATH IN A TUBERCULAR PATIENT. POST MORTEM: PRESENTING MUSCULAR APPEARANCES.

By JOHN D. JACKSON, M. D., of Danville, Kentucky.

On Tuesday night, the 8th of December, 1868, I was called to see Ben. Owsley, a negro, æt. about 35 years.

He had been, by occupation, a hotel steward since the war; during its continuance having served in the army as a soldier. Though he had generally enjoyed good health, yet, according to the testimony of his fellow servants, he had been subject to occasional violent fits of coughing for two months previously.

When I reached his room he was in the midst of one of his attacks, with a wash-bowl before him, containing at least a pint of blood, and he continued to cough up more until, before he ceased, the total amount lost was probably a pint and a fourth.

There was no immediate exciting cause inducing the attack ascertainable. On auscultation, moist rales, produced by the blood, were generally perceptible on the chest, but especially at the apex of the left lung, from which, most probably, the hæmorrhage came.

Caused him to eat dry table salt freely, and, within a couple of minutes, the hemorrhage ceased.

Wednesday morning, the 9th, visited him and found him sitting up by the stove. Pulse a little full and hard, breathing easily, and declared himself as feeling very well. Enjoined upon him perfect quietude, but no medicine.

During the day, contrary to orders, he went down into the dining room—though had no hemorrhage until night, at which time he again had a violent attack—and having previously exhausted his stock of salt, went out on the porch into an adjoining room for some at a time when the night air was far below the freezing point, in the meanwhile having on nothing but his shirt and drawers. By the free use of the salt the hemorrhage was again checked, and, to assist in quieting him, morphia, in 1-3d grain doses, repeated at intervals of four hours, was prescribed.

Thursday, 10th. Spitting blood occasionally—lost during the night previous at least a pint. Pulse very rapid and irregular, so that it could not be accurately counted. Breathing also very rapid and irregular, and of a jerking, panting character. The right lung is perfectly dull on percussion, and tubular breathing audible; also coarse moist rales, doubtless due to blood poured out into the bronchi. The apex of the left lung presents a clear vesicular murmur, perfectly natural; the lower lobe also exhibits the vesicular murmur, though not so distinctly, and is not clear in percussion. I have changed my opinion as to the origin of the hemorrhage, it now evidently coming from the right lung. Complaining of the very uncomfortable feeling to the tongue and mouth from the continued use of the salt, prescribed an emulsion of spts. tãmbiath, gtt. viij. every 3 hours, with the morphia to be continued as before. He spat up during the day and night probably three-quarters of a pint of blood.

Friday, 11th. Breathing more difficult, pulse frequent and irregular, dullness of right lung more marked than the day before. Spat up probably one-half pint during the day and night. Prescription of day before continued, and got him to take oyster soup tolerably freely.

Saturday, 12th. No fresh hæmoptysis now, though spits up

occasionally a dark clot of blood which had evidently been retained in the lungs for some time. Breathing of same character as on day before, as also the pulse *subsultus tendinum* perceptible; seems also a little flighty at times. *R*—Turpentine, diminished to one-half, and morphia to one-quarter grain. Soup to be given as freely as he can be induced to take it.

Saturday, 13th. General symptoms rather more aggravated than on day before. Dullness almost perfect on right side of chest and the lower lobe of the left lung. Had spit up some clots during the preceding night, though no fresh blood is apparent. Prescription continued, insisting especially upon increasing the soup.

Died at 12 M.

Post mortem at 9 P. M.

Body yet warm; not particularly emaciated; rigor mortis of limbs.

Removed the lungs and heart, the contents of the chest being extracted with very great difficulty, owing to the general pleuritic adhesions existing.

On removal an anomaly was perceptible, the right lung having but *two* lobes, the left, as usual, being divided into two. Tubercles were generally infiltrated into both right lobes, and both were partially hepatized, certain little patches of vesicular tissue being unaffected between larger patches hepatized around tubercular deposits. In the center of the upper lobe a clot of blood filling a bronchial tube for probably an inch was to be seen, but a careful search detected no open vessel from which it could have proceeded. The left upper lobe at its *apex* is perfectly free from tubercular deposit, and looks natural, base infiltrated; the lower lobe is profusely infiltrated with tubercles, is partially hepatized, and contains a vomica of the capacity of half an ounce or more, though empty. Heart of normal size, and presents a healthy appearance.

COMMENTARY.

The patient, I think, might be said to have died of pneumonia rather than hæmoptysis, though doubtless the latter contributed largely to the result.

There is one lesson in connection with the case which seems to be worth the remembrance, viz.: The demonstration of the probable facility of general blood letting as a preventive of inflammation; at least inflammation of the lungs. On the morning following the commencement of the patient's illness a careful examination was made, at a time when no hemorrhage was going on, and when it could, therefore, be made satisfactorily; certainly it exhibited no evidence of the congestion subsequently apparent after his exposures on the second night, and which the loss of more than a pint of blood on the first occasion, and nearly as much on the second, it seems could not prevent. Certainly such a case is enough to stagger reliance on venesection as a prophylaxis of inflammation—a reliance which we know underlaid the practice of our immediate predecessors.

The *post mortem* exhibited two abnormal phenomena. An abnormal appearance of natural organs, and an abnormality of a diseased condition. For, though it may sound paradoxical, yet it is true that disease, or every pathological product, has its natural laws of development as well as health, or the normal organs or tissues. The right lung had not the natural division of the large upper lobe into the small middle lobe, thus presenting the anomaly of but two instead of three right lobes. The irregular or abnormal pathological condition consisted in the fact that there were no tubercles in the apex of the left upper lobe, and that the only vomica found was in a lower lobe.

Dr. Geo. B. Wood says: "The first seat of the tuberculous deposition is, in the great majority of cases, in the upper summit, or near the summit, of the lung, and when, as not unfrequently happens, it occurs in other parts, the tubercles are almost always more abundant, larger, and more advanced in the situation alluded to than elsewhere, and it is here, also, that vomica form. * * The tubercles seem to evince a preference for the upper over the lower lobe, even at the same level. Thus the former may be completely occupied with the morbid deposit, while the latter is nearly or quite free from it." (1).

Sir Thomas Watson says: "It is a remarkable and a very im-

(1). Wood's Practice, p. 68, Vol. I.

portant fact that tubercles, when they affect the lungs, are not deposited at random, or indifferently in all parts of those organs. It is in the upper lobes, and in the upper and back parts of those lobes, that, in nineteen cases out of twenty, and in more than that proportion, we meet with tubercles where they are few. * * It is here also they first ripen and grow soft. * * It is here that we have the most frequent, the most numerous, and the largest exemations in the lung, what are technically called vomicæ. And the number and the magnitude of the tubercles and of the vomicæ gradually diminish from the summit of the lungs downward.

"Now, these are not mere *curious* facts; they have a most important bearing upon the diagnosis in cases that might otherwise be doubtful. It is a rule which has but few exceptions—just enough to establish its claim to be a rule—that the favorite habitat of pulmonary tubercles is the upper part of the superior lobes of the lungs." (1).

Dr. L. M. Lawson says: "The question most definitely and exclusively settled in regard to the seat of tubercles is, that the apices of the lungs constitute its common and almost invariable primary location. In nearly all instances the deposits take place at the apices first; though, when the disease progresses rapidly, a considerable portion of the tissue becomes rapidly invaded. * * From tubercles are formed in the lower portion only as the result of *extension* from above downward, or as secondary to pneumonia. * * So constantly, indeed, is the deposit of the tubercle limited to the apices, that Louis declares he never met with large cavities in the lower lobes. It must be stated, however, that Louis found two cases in 123 in which the deposits existed alone in the lower lobes. But the fact, instead of disturbing the general law recognized, serves to establish the belief that deposits in the lower portions of the lungs are infinitely rare.

"Dr. Hughes found in 250 cases the upper to be the seat in 237, and only in one instance, were the deposits limited to the inferior position." (2).

(1). Watson's Practice, p. 696, Am. Ed., 1858.

(2). Lawson on Phthisis Pulmonalis, p. 105.

It will be seen, then, that the *post mortem* appearances of the case presented are of the rarest kind with reference to the deposit of tubercles. As to the anomaly of the lobular divisions, I am unable to speak with reference to its relative variety, inasmuch as I have been unable to find a notice of such unnatural condition in any anatomical work at my command.

FERRUGINOUS PREPARATIONS IN THE DISEASES OF INFANCY.

By J. S. B. ALLYNE, M. D., Professor of Materia Medica and Therapeutics in the St. Louis Medical College.

The invariable recommendation of writers upon the diseases of infancy to administer iron in some form during the last or chronic stage of any malady, whatever it may be, together with similar advice of very many physicians who pursue the same plan, has concentrated my attention upon this therapeutic agent, hoping from it all that is claimed, yet not satisfied with it, the rather disappointed at not deriving results I had been led to expect.

Indeed, iron seems to be the least common among the medicines applicable to the diseases of infants; notwithstanding the apparent indications for its use, they are not met by it; on the contrary, especially if any digestive derangement occur, iron will act as an irritant and not be tolerated. I am aware this is opposed to the opinions of many who give on all occasions of prostration tonics, and particularly iron, who consider all cases characterized by simple pallor of skin and laxity of tissue as anæmia. Anæmia, it is true, always presents the indications for iron, and this alone; but anæmia alone constitutes the fewest number of cases with which we meet in infancy.

The waxy paleness of the skin, combined with flabbiness; the enlarged belly and looseness of the bowels, all indicative of chronic inflammatory action of the small and large intestines, with, probably, ulceration, has not been satisfactorily met by any form of iron, in whatever dose, which I have administered. In fact, the iron has proved irritating, and required its immediate suspension. It may be said this is true of most medicines used in this formid-

able disease ; but so frequent and constant has been the result that the relation of cause and effect was very evident. So, too, with the summer-complaint, so-called, of our own country, which some may be disposed to term an inflammatory disease, in the beginning at least ; iron, used for its legitimate purposes of restoring the red corpuscles, has availed in the fewest number of cases. I may make the same remark concerning the after treatment of inflammations of the respiratory organs ; here particularly do the ordinary rules of hygiene, such as pure air, a judicious diet, etc., most rapidly restore to health. The rapid changes of nutrition in the tissues of the infant, the ease with which assimilation is performed, and the consequent, it might be said, superiority of life over decomposition ; in fact, the excess of vital force, whatever that may be, in the child, would point almost to the inutility of much medication in the diseases at this age. Sad, indeed, seems to be the conclusion at which we arrive from our experience : it is in the knowledge of all, that the recovery from any disease in infancy is as rapid as the prostration is great at the onset of this attack ; of course allowance must be made for the influences which overshadow the disease and make oftentimes a part of its substance, such as the strumous diathesis and the like. But the development of the child is so rapid that it reacts against its disease more powerfully than would the adult, and, for a still stronger reason, than the aged. To be sure the sympathies are extensive by which one part of the system responds immediately to trouble in another direction ; the sensibilities are great by which external influences may, on slight occasions, produce disarrangements, but nature is wise in her provisions for her progeny, by giving that superabundance of vitality which averts many a misfortune. That very summer-complaint, whose name implies the length of time it usually lasts, is removed rather by *warmth*, clothing, air, light, food, than by remedies however numerous.

Let me not discredit the value of medicines ; I believe in their efficiency on occasions, but we are too apt to forget the immense influence and control over diseases which hygienic measures develop, and which the child, from its tender age, is usually mere fortu-

nate to receive than those of larger growth. This is not more speculation; it seems to me that the observations of any physician would result in like remarks. I think we can depend upon this great vitality, more than with adults, in our efforts to relieve the diseases of infancy; if we add to this the assiduous attention which the affection of the parent arouses, we have two more powerful influences than in most cases medicine can exert.

Hence the care to be used in the administration of medicine at all to the infant; hence the frequent changes in medication which we see presented in the course of a long disease; if one medicine will not answer, another may, although here we may impute something to ignorance of the disease or the remedy, yet, very frequently, it is a protest of nature to the use of any medicines at all; hence, in reference to a particular class of remedies, restoratives, the less indication and urgency for their use.

So far as the individual medicine, iron, is concerned, it is to be used in anæmia, such as we recognize as occurring from a loss of blood, either abundantly or in small quantities, through a period of time; the apparent anæmia, as a consequence of protracted disease, has never appeared to me to yield to the iron, acting in its peculiar way; on the contrary, nature seems to exclaim against it, and now in such diseases I believe it contra-indicated.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

GRAY'S SCHOOL AND FIELD BOOK OF BOTANY. Consisting of First Lessons in Botany, and Field, Forest and Garden Botany. By ASA GRAY Fisher, Professor of Natural History in Harvard University. New York: Ivison, Phinney, Blakman & Co. 1888. For sale by E. P. Gray, St. Louis.

This book, one of the best of Prof. Gray's series of Botanical Text-Books, is intended for the use of beginners, and for classes in the common and higher schools. It consists, first, of lessons in botany, and then special or field, forest, and garden botany, all illustrated and well adapted for practical use. Beginning with the first principles, it progresses by easy stages until the student is enabled to comprehend the more minute details of this beautiful and useful science. In fact, the book supplies a great

desideratum to the botanist and botanical teacher, there being no similar class-book published in this country. We have adopted Prof Gray's series of Botanical Text-Books in our own course of lectures at the St. Louis College of Pharmacy, and most heartily recommend them to students and teachers. The present volume is especially useful, even to the physician, as it comprises the elements of a complete botanical education.

A HAND BOOK OF UTERINE THERAPEUTICS, AND OF DISEASES OF WOMEN.
By EDWARD JOHN TILT, M. D. Second American edition, revised and amended.
D. Appleton & Co.: New York, 1869.

This work has previously been noticed favorably in the *REPORTER*, and we most willingly add again our approval of Dr. Tilt's book. He develops the following main points in the work:

1. The paramount importance of hygiene for the relief and cure of diseases of women.
2. The constitutional nature of many diseases of women, and the impossibility of curing them without constitutional remedies.
3. The manifest reaction of uterine diseases on the female system, and the impossibility of curing many uterine complaints without surgical measures.
4. The great value of therapeutics to assuage and cure diseases of women, and the belief in the value of those remedial measures that are as old as medicine itself, such as venesection, emetics, caustics, etc.

The work is practical and conservative, and none can be more useful to the general practitioner.

THE CORRELATION AND CONSERVATION OF FORCES. A Series of Expositions, by Profs. GROVE, HELMHOLTZ, MATER, FARADAY, LIEBIG and CARPENTER, with an Introduction by E. L. Youmans, M. D. D. Appleton & Co.: New York, 1868.

This is a most valuable collection of essays by eminent writers on this very important subject, and we can not express in too high terms our obligations to Dr. Youmans for presenting them to the American reader. To the student and to the profound thinker alike is this a rich feast. We can do no more than merely announce the work and say that all should read it.

ON THE ORIGIN OF SPECIES BY MEANS OF NATURAL SELECTION, OR THE PRESERVATION OF FAVORED RACES IN THE STRUGGLE FOR LIFE. By CHARLES DARWIN, M. A. A new edition, revised and enlarged. D. Appleton & Co.: New York, 1888.

This is too well known to require more than the announcement, that a new and enlarged edition has just been issued, containing many important additions, and entirely revised by the author. Mr. Darwin's work has met with much opposition, but, withal, has steadily gained ground in the scientific world. All students of Natural History should be well acquainted with his theory, which, at least, deserves a most earnest study. We trust soon to announce the appearance of Mr. Darwin's larger work, promised on the same subject, which will be more elaborate and complete.

A HISTORY OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA, FROM ITS FOUNDATION IN 1763; with sketches of the lives of deceased Professors. By JOSEPH CARSON, M. D., Professor of Materia Medica and Pharmacy. Philadelphia: Lindsay & Blakiston. 1869.

This is a most interesting book, showing the earliest efforts at establishing an institution of medical learning in this country. None has done more to elevate the standard of professional knowledge than this old, yet still vigorous Medical College. To the alumni of the university, as well as to the general reader, this will be a welcome and valuable book.

TREATISE ON THE DISEASES OF THE EAR, INCLUDING THE ANATOMY OF THE ORGAN. By ANTON VON TRÖLTSCHE, M. D. Translated by D. B. St. John Roosa, M. D. New York: William Wood & Co. 1869. For sale by Frary, Cowan & Krath, St. Louis.

This is one of the most useful of the works lately published on specialties in surgery. The science of otology is fast taking its place in the van of the great movement in the ranks of medicine, and diseases of the ear are now receiving that attention which the suffering they produce should require to be shown them. We can only recommend the work as comprising all that is necessary to a complete understanding of the subject. It is illustrated with numerous cuts and issued in good style.

PENNSYLVANIA HOSPITAL REPORTS, VOLUME II. Philadelphia: Lindsay & Blakiston. 1869.

This is a continuation of the valuable reports of cases in this Hospital. This volume, like the first, consists for the most part of papers of a practical character, based chiefly on observations made at the Hospital. Several of the articles are further experiences of members of the staff on matters previously discussed in the first volume. The favorable reception which the first volume has received from the profession will, we trust, be equally extended to this. Both are valuable acquisitions to the medical library.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. BY J. LEWIS SMITH, M. D. Philadelphia: Henry C. Lea. 1889.

The purpose of Dr. Smith has been to present a description of the diseases of infancy and childhood in a clear, concise, yet practical light, and in this he has succeeded most admirably. We have only room to recommend the work as one of the best lately issued on this important subject, and as containing the latest views on the many diseases children are so unfortunately heirs to.

SYPHILIS AND LOCAL CONTAGIOUS DISORDERS. BY BERKELEY HILL, M. D., LONDON. Philadelphia: Henry C. Lea. 1889.

This is a systematic arrangement and minute description of Venereal Diseases, comprising the results of the most recent researches on this most complicated subject. The present book is valuable as giving a comprehensive view of this class of diseases, yet within a compass more easily referred to than the larger works. It is a good book, and to the specialists, on this class of diseases, invaluable.

MEDICAL REPORTER.

ST. LOUIS, FEBRUARY 15, 1889.

The Present State of the Materia Medica.—We were of the opinion, not very long ago, that the *Materia Medica* was one among the branches of medicine which had been allowed to fall into decay, from the very unsatisfactory results which followed the use of medicines; though every physician had a separate list of them for his own specific purposes, it did seem at one time that its study was more honored in the breach than in the observance. Our opinion at present has changed with the subject; or rather, we are being wafted about with every wind of doctrine, which is setting in from all quarters. Truly, the *materia medica* is in a transition state. The errors of the past have been displaced by the errors of the present; in not a few instances the profession has vegetated around the dead trunks of old doctrines, and only in comparatively rare cases, and very slowly, has the rapid advance of chemistry, physiology, and perhaps pathology, been able to give some little positive knowledge to a branch of medicine which, before all others, should

have at least some definiteness in the object to which it is devoted. Strange to say that there is more ignorance manifested in the prescribing of medicines than is warranted by the knowledge, slight though it be, which we have of their virtues. Beyond a mere mechanical action, we wander in infinite mazes as to the remedy to be chosen, or as to its effects. The great number of classifications of medicines found in the books is a proof of this, if none other were wanted; and until we do proceed in the right way to ascertain the effects of medicinal agents, it would be better to follow no other more artificial arrangement than an alphabetical one, describing under the name of each substance the diseases in which it has been used. But we do not wish to assert this, absolutely, for the outline of many classifications is good; the great fault in all is the division and subdivision to which to attach some particular opinion of the author. The pathologist is oftentimes at fault here, as when one man taught, and was so believed by an innumerable number of followers, that all disease was sthenic; and another at the present day, that whisky, quinine and iron were the sole remedies.

But the prominent difficulty in the way of obtaining positive knowledge as to our remedial agents, is in the great number of new remedies, or modifications of old ones, which are constantly presenting their claims for superiority in the treatment of disease. Not that each one may not have some virtue, but that we do not yet know it; the fact of its use on one occasion is not sufficient to establish its use in like cases, or to be offered to the profession for such purpose. We all know the inflated reputation of glycerine, of tannin, of some of the preparations of iron, etc.

The student, and even the medical man, are bewildered among the contradictory reports which are daily circulated as to this or that remedy, and finally subside into apathy toward the whole materia medica. The doctrine of Hahnemann had one good effect, in limiting the number of medicines, by reducing the amount of each given; and if we add to that what further

he taught, and which is pursued to a great extent by modern writers on *materia medica*, that it is worth while to investigate the physiological effects of some medicines, a point has certainly been gained, in this respect at least, that each medicine should be submitted to some kind of test before offering any conclusions upon its virtues. Of such a nature have been the investigations on the powers of bromide of potassium, which have developed more understandingly its operations than concerning any other medicine, new or old.

But to study the *materia medica* and relieve it of the obloquy of uncertainty, and make it more, as its kindred branches of medicine, positive and certain, is not by any physiological investigation, even if that on occasion be pursued. Our colleges of pharmacy have done very much good in sending a different class of workers into the field where before those might glean who chose. It is certainly one positive step in the right direction that men must be educated to the business of the apothecary to work it properly and with the most efficiency to the physician. How much aid he can afford by his knowledge of drugs and chemicals the physician well knows at the bedside, when depending on one single article of the *materia medica* for the relief of the patient. But, further than this, the physician alone can render that service to the *materia medica* which shall advance it to the grade of a science, by his careful clinical studies. What has been learned of medicines positively has been gathered by the observation of their action in disease; *materia medica* can be learned only in that way, and should more properly be taught in that way, leaving the mere descriptive, botanical, chemical and pharmaceutical to be gathered from chairs devoted especially to that purpose. We hope more for the *materia medica* in the next quarter of a century, through the agency of clinical teaching and observation, than from any experiment which may be devised; and we urge this plan, by no means new, upon the attention of individuals, clinical societies and colleges.

TO OUR PATRONS.

The present number closes the third volume of the **MEDICAL REPORTER**, and with this volume closes the editorial management of the present editor, he having sold out his entire interest to the publisher, Mr. P. M. Pinckard, who is now sole proprietor of the journal. Owing to the calls of his private business, the present editor could not give the time and attention to the **REPORTER** which it necessarily required; and now, having remained at his post until the journal was fully established and supported by numerous friends and patrons, he feels that he can, without detriment, withdraw and give place to those who have leisure to give to the arduous duties of editors—duties requiring much more time and labor than is generally supposed or credit given for. In closing his connection with the **REPORTER**, the editor begs leave to return his sincere thanks to his many friends for their kind and candid support, and trusts that the same will be continued to those who may have the journal in charge. The success of the **REPORTER** has been with him a matter of pride and interest, and while he does not ascribe that success so much to himself as to the partiality of friends, still he feels gratified in having been able to add something to the progress of medical journalism in the West, and that he should have in some respects aided in procuring the **REPORTER**'s present prosperity. That the same may continue in an increased degree is his most sincere and heartfelt wish.

Notice.—All communications for the undersigned will hereafter be directed as follows:

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CONTENTS.

	PAGE.
Alimentation (Defective) a Cause of Disease.....	1, 37, 69, 101
Agents for Journal.....	35
Action of Phosphate Soda.....	60
Alloy of Aluminum.....	99
Aneurism by Anastomosis.....	139
Ancient Specula.....	140
Address on Present State of Therapeutics.....	154
A Curious Case.....	164
Antediluvian Vegetation.....	190
Academy of Medicine, Paris.....	220
American Medical Association,	130, 238
American Journal of Obstetrics,	259, 451
American Naturalist.....	260
Activity of the Skin in the Absorption of Medicines.....	281
Action of Henbane, Opium and Belladonna.....	315
Action of Medicines, Etc.....	318
Account of Four-legged Child....	351
Arsenic in Treatment of Consumption.....	387
Appleton & Co., Publishers.....	420
A Word for Dogs.....	447
Arteries, Twisting Ends of.....	448
Anecdote of Rayer.....	458
Aristolochia Serpentina.....	485
Ague Weed.....	500
Apocynum Cannabinum.....	559
Asclepias Syriaca.....	561
Administration of Drugs.....	574
Alnus Serrulata.....	653
Alder, White.....	652
Alder, Black.....	652
American Centaury.....	654
American Holly.....	654
American Medical Colleges.....	658
Acarus Saccharis, or Sugar Insect.....	679
Ale Quinine.....	681
Antidote to Strychnine.....	682
Action of Belladonna.....	700
Acid, Nitric, Use in Intermittent Fever.....	740
Atropia as a Therapeutic Agent.....	767

	PAGE.
Bozeman's Self-retaining Speculum.....	17
Bailliere Brothers.....	35
Bowels, Treatment of Obstructions.....	56
Blow-Pipe Gas Cautery.....	63
Brown-Sequard, Dr.....	66
Board of Health of St. Louis....	93
Bryant, Dr. Geo. Syng.....	98
Bannister, Dr. T. J.....	163
Bichloride of Methylene.....	220
Belladonna in Constipation.....	312
Belladonna, Opium and Henbane.....	315
Blood, Nature of Two Kinds.....	325
Button Wood.....	389
Bougies, Slippery-Elm.....	425
Black Willow.....	494
Bignonia Catalpa.....	499
Boneset.....	549
Blood Root.....	560
Beef Tea.....	657
Belladonna, Action of.....	700
Bdellatomy.....	756

	PAGE.
Cubic Acid.....	32
Cautery by Blow-Pipe.....	63
Carbolic Acid and Iodine.....	67
Chloroform, Use of.....	68
Colica Pictorum, Cause of.....	85
Corns, Treatment of.....	89
Colorless Tincture of Iodine.....	123
Cod Liver Oil Iodized.....	131
Cerebro-Spinal Meningitis.....	135
Carbolized Sponge Tent.....	158
Cinnabar in Idaho.....	164
Classification of the Phenomena of Mortification.....	165
Case of Midian Lithotomy.....	188
Cobra Poison.....	196, 320
Case of Labor.....	202
Cases of Ovarian Tumors.....	211
Chlorodyne.....	216
Chronology of Anæsthesia.....	218
Cinchona Tree, Observations on.....	266
Comstock's Food for Infants....	292

PAGE.	PAGE.
Cornus Florida.....293	Dunglison, Dr. Robley.....195
Cornus Cernata.....311	Device in Treatment of Fracture.....205
Cornus Sericea.....311	Destructive Power of Explosive
Constipation, Treatment of.....312	Substances.....208
Cincinnati College of Medicine	Darkness, Effects of.....221
and Surgery.....323	Detect Salicine in Quinine.....290
Character of the Blood.....325	Dogwood, Three Barks.....293, 311, 381
Carbolic, Phenic and Cresylic	Dressing for Wounds.....386
Acids.....342	Diphtheria.....410
Chronic Rhinitis.....357	Disinfectants.....412
Case of Nasal Polypus.....361	Dogs, a Word for.....447
Cephalanthus Occidentalis.....389	Dyospyros Virginiana.....500
Cucumber Tree.....397	Dysentery Treated with Nux
Craig Microscope.....419	Vomica.....539
Commencement of Old Age.....445	Deodorants.....541
Clinical Cases of Fracture of the	Dysentery and Diarrhœa, Treat-
Skull.....460	ment of Chronic.....561
Coal Oil Lamps, to Prevent Ex-	Drugs, the Administration of.....574
plosion of.....477	Dynamics of Organic Life.....613
Catalpa Bignonia.....499	Dilator of Dr. Holt.....660
Cases of Hermaphrodites.....504	Diseases of the Urinary Organs.....718
Case of Fracture of the Thigh.....509	
Catalogues of Medical Books.....516	E
Chinese Styptic.....520	Engelmann, Dr. Geo.....98
Case of Puerperal Fever Treated	Epidemic Cerebro-Spinal Menin-
with Sponge Tent.....522	gitis.....139
Chasins of the Colorado.....526	Excessive Lactation and Its Ef-
Colorado River.....526	fects.....181
Carbolic Acid in Cutaneous Dis-	Embalming the Dead.....191
eases.....537	Eczema.....195
Country Wells.....542	Explosive Substances.....211
Coral Root.....560	Effects of Darkness and Silence.....221
Convulsions, Puerperal.....525, 597	Expression of the Fœtus.....227
Cases of Placenta Prævia,	Eye, New Operation on.....257
516, 565, 588	Extreme Power of Labor.....287
Cotton Plant.....650	Elasticity on Muscular Contraction.....449
Castanea.....652	Eve, Dr. Paul F.....545
Chestnut.....652	Eupatorium Perfoliatum.....549
Capsicum.....656	Eupatorium Verbennafolium.....556
Cayenne Pepper.....656	Effects of Medicines—How Pro-
Clinical Case.....694	duced.....613
Chloride of Sodium.....734	
Case of Infantile Fever.....743	F
Cure for Headache.....747	Female Physicians.....35
Chloroform, to Prevent Sickness	Freckles, Removal of.....99
from.....749	Fecundity.....99
Cryptogams and Fermentation	Fougera's Cod Liver Oil.....131
in disease.....757	Fracture of Skull.....138
D	Fracture of the Ulna.....139
Defective Alimentation a Cause	Fracture, Method of Treating.....139
of Disease.....1, 37, 69, 101	Female Urethra and Bladder,
Disease, Cause of.....34	Diseases of.....174
Diseases of the Female Urethra	Fracture of the Patella, Treat-
and Bladder.....174	ment of.....205
Dead, Embalming of.....191	Foot, the Care of.....219
Duffield's Fluid Extracts.....194	

	PAGE.
Ferri-Iodidi, Pills of.....	223
Fallacy, a Popular.....	290
Food for Infants.....	292
Fire-Proof Linen.....	424
Fracture of the Skull.....	460
Fracture of the Thigh.....	509
Frary, Cowan & Kraft.....	756
Ferruginous Preparations in Diseases of Infancy.....	784

G

Grape, the Scuppernong.....	31
Gas Cautey.....	63
Great Britain, the Population of.....	92
Graduates of Medical Colleges.....	130
Gangrene, Observations on.....	165
Georgia Bark.....	262
Gestation Prolonged.....	442
Gentian Quinquaflores.....	500
Gün Shot Wounds.....	517
Gelseminum Sempervirens.....	557
Gossypium.....	650

H

Hypodermic Injection of Morphine.....	34
How to Produce the Sexes at Will.....	53
Hot Springs of Arkansas.....	97
Hegeman & Co.....	99
Hospital Reports.....	138, 276
How to prevent Pitting from Small-Pox.....	151
Homans, Dr. John, Death of.....	228
Henbane, Opium and Belladonna Action of.....	315
Horse-Radish, Syrup of.....	350
Humboldt Medical College.....	354
Hypodermic Therapeutics.....	453, 501
Hair Washes and Restorers.....	484
Hermaphrodites, Cases of Supposed.....	584
Hoarhound, Wild.....	556
Hydrastis Canadensis.....	560
Historical Notes on Treatment of Wounds and Ulcers.....	509, 581
History of Cases of Placenta Prævia.....	516, 565, 588
How do Medicines Produce Their Effects.....	613
Hygiene of Infancy.....	708
Headache, Cure for.....	747
Health of St. Louis.....	755
Hæmoptysis and Pneumonia, Case of.....	779

I

	PAGE.
Injections of Morphine.....	34
Iodine, Colorless Tincture of.....	123
Indiana State Medical Society.....	130
Iodinized Cod Liver Oil.....	131
Investigations on the Phenomena of Mortification.....	165
Invalid Bed.....	213
Iodized Opodeldoc.....	222
Imperfect Transition of the Testes.....	229
Indigenous Remedies which may be Employed as a Substitute for Sulphate of Quinine in the Treatment of Malarial Fever, 261, 293, 389, 485, 549, 650, 734	
Injury to the Head, Remarkable Recovery.....	277
Immature Observations.....	283
Influence of Elasticity on Muscular Contraction.....	449
Influence of Weather on Health.....	476
Indian Quinine.....	500
Indian Hemp.....	559
Indolent Ulceration, Case of.....	564
Indiscriminate Use of the Probe.....	576
Inebriation, on.....	610
Ipeccacuanæ et Opii.....	649
Ilex Opaca.....	654
Iodine in Tannin.....	660
Iodine an Antidote to Strychnine.....	682
Insanity, Treatment of.....	683
Immoral Publications.....	689
Infancy, Hygiene of.....	708
Infantile Fever.....	743
Infantile Gonorrhœa, Case of.....	775

INDIGENOUS REMEDIES WHICH
MAY BE EMPLOYED AS SUBSTITUTES FOR THE SULPHATE
OF QUININE IN THE TREATMENT OF MALARIAL FEVER—

1. Georgia Bark, Pinckneya Pubens.....262
2. Dogwood, Cornus Florida.....293
3. Dogwood, Cornus Sericea.....311
4. Pond Dogwood.....389
5. Tulip Tree, Liriodendron.....390
6. Small Magnolia, Bay Tree.....395
7. Magnolia Acumenata.....397
8. Magnolia, Large.....397

PAGE.	PAGE.
Nineteenth Annual Meeting of American Medical Association..... 238	Pond Dogwood..... 389
New Operation on the Eye.... 257	Prolonged Gestation..... 442
New Sydenham Society..... 258	Prevention of Coal Oil Lamp Explosions..... 477
New Regulation to Insure Attendance of Medical Students..... 324	Persimmon..... 500
Nasal Catarrh..... 357	Principles in Treating Fractures of the Thigh..... 509
Nasal Polypus, Treatment of.. 361	Penghawar, Djambi..... 520
Novelty Microscope..... 547	Puerperal Fever, Case of..... 522
Nitric Acid in Intermittent Fever..... 740	Protection of Water in Lead Pipe..... 542
○	Pharmacist, The..... 548
Ossified Placenta..... 36	Placenta Prævia, Cases of, 516, 565, 588
Obituaries..... 67, 163, 228	Protest Against Indiscriminate Use of the Probe..... 576
Obstructions of Bowels, Treatment of..... 56	Puerperal Convulsions..... 525, 597
Onions During Epidemics..... 88	Pulvis Ipecacuanæ et Opii.... 649
Obstetric Hand..... 125	Polygonum Avicular..... 652
Observations on Mortification, 165	Prinos Verticillatus..... 652
Ophthalmic Miscellanies..... 197	Platanus Occidentalis..... 655
Ovarian Tumors..... 211	Ptelia Trifolata..... 655
Orthopædic Surgical Apparatus and Appliances.... 363, 399, 428	Potash, On Use of..... 672
Ovariectomy, Case of..... 133, 421	Peroxyde of Hydrogen..... 724
Old Age, Commencement of... 445	Prevention of Sea Sickness... 748
Odontorhiza Corallorhiza.... 560	Prevention of Sickness from Chloroform..... 749
Observations on Insanity..... 683	Present State of Materia Medica 789
□	Q
Primary Cause of Disease, 1, 37, 69, 101	Quarterly Journal of Psychological Medicine..... 418
Physician, Female..... 35	Quinine, Substitutes for, in Malarial Fevers, 261, 293, 389, 485, 549, 650, 734
Produce Sexes at Will..... 53	Quinine, Adulteration of..... 290
Phosphate of Soda, Use of.... 60	Quackery, Success of..... 291
Population of Great Britain... 92	Quinine, Indian..... 500
Pneumonia, Treatment of.... 147	Qualified Practitioners of Medicine..... 546, 690
Prevent Pitting of the Face by Small Pox..... 151	Quinine Ale..... 681
Present State of Therapeutics.. 154	Quinine with Iodine..... 682
Primm & Marthaler..... 164	■
Phenomenon of Mortification.. 165	Russian Female Physician.... 35
Pregnancy, Sickness of..... 185	Removal of Scapula, Clavicle and Arm..... 68
Pinckneya Pubens..... 262	Removal of Freckles..... 99
Pulmonary Embolism..... 276	Refined Saltpetre..... 100
Power of Labor..... 287	Reports, Hospital..... 138, 188, 276
Popular Fallacy..... 290	Richmond Medical Journal.... 163
Physiological Action of Henbane, Opium and Belladonna..... 315	Remarkable Recovery from Severe Injury of the Head, 277
Physiological Action of Medicines..... 318	Relation of the Chemical Constitution and Physiological Action of Medicines... 318
Poisoning, Cobra..... 320	
Pepsine..... 323	
Phenic Acid..... 342	

	PAGE.		PAGE.
Regulation to Insure Attendance of Medical Students on Lectures.....	324	Storer and Heard on Criminal Abortion.....	514
Rhinitis, Chronic, Case of.....	357	Registration in Rhode Island..	514
Removal of Tumors from Nose, 377		Emmett on Vesico-Vaginal Fistula.....	543
Rhinoscope, Use of.....	377	Walter's on Conservative Surgery.....	544
Report of Case of Fracture of Thigh.....	509	Flint on the Liver.....	544
Render Paper Water-Proof....	596	Cazeaux on Midwifery.....	577
		Birch on Constipated Bowels..	578
REVIEWS AND BOOK NOTICES		Seaton on Vaccination.....	578
Bedford's Obstetrics.....	90	Arlt on Disease of the Eye....	579
Bouchardat's Abstract.....	91	Draper's Intellectual Development of Europe.....	604
Bauer's Orthopædic Surgery... 92		Storer's Chemical Dictionary..	606
Stone on Bromide of Potassium, 92		Flint's Practice of Medicine....	607
Gray's Works on Botany.....	126	Ellis' Medical Formulary.....	608
Prince on Plastic Surgery.....	127	American Medical Association,	608
Bartholow on Spermatorrhœa..	127	Goff's Day Book and Ledger...	609
Pennsylvania Hospital Reports,	128	Clark's Mind in Nature.....	686
Hewitt on Diseases of Women,	159	Marshall's Physiology.....	687
Atlas of Venereal Diseases,		Harrison's Comparative Anatomy.....	722
156, 579, 610		Bodenhammer on Anal Fissure,	723
Chapman's Botany.....	193	Hudson on Fever.....	723
Holden's Dissector.....	193	Klob's Pathological Anatomy,	723
Thomas on Diseases of Women,	224	Aitken's Practice of Medicine..	750
Stellway on the Eye.....	224	Greenhow on Bronchitis.....	751
Elliott's Obstetric Clinic.....	225	Mackenzie on the Laryngoscope	752
Stille's Materia Medica.....	226	Thompson's Clinical Lectures,	753
Morgan's Electro-Physiology..	226	Lea on Superstition and Force,	753
Darwin on Variation of Animals	254	Cleveland's Medical Lexicon,	754
Page on Man.....	255	Wythe's Dose Book.....	754
Biddle's Materia Medica....	256	Gray's School and Field Book of Botany.....	786
Klobe on Anatomy of the Female Sexual Organs.....	256	Youmans on Conservation of Force.....	787
Chamber's on the Indigestions,	257	Tilt on Uterine Therapeutics..	787
Wilson on Diseases of the Skin,	291	Darwin on Origin of Species...	788
Wood's Materia Medica.....	347	Carson's History of University of Pennsylvania.....	788
Hoopes on Evergreens.....	349	Von Troltsch on the Ear.....	788
Loomis on Physical Diagnosis,	349	Pennsylvania Hospital Reports,	788
Wormley's Micro-Chemistry of Poisons.....	382	Smith on Diseases of Children,	789
Rudolphy's Pharmaceutical Directory.....	386	Hill on Venereal Diseases....	789
Salisbury on the Blood.....	417		
Metz on Anatomy of the Eye..	418		
Braithwaite's Retrospect.....	418		
Rankin's Abstract.....	419		
Butler's Medical Compendium,	419		
Medical Societies.....	450, 543		
Brown-Sequard on Nerves....	451		
White's Dental Materia Medica,	451		
Draper's Physiology.....	478		
Hodge on Diseases of Women,	481		
Robertson on Extracting Teeth,	482		
Physician's Visiting List... 482,	514		
Hillier on Diseases of Children,	513		

S

Speculum, Self-retaining.....	17
Scuppernong Grape.....	31
Sexes, How to Produce at Will,	53
Soda Phosphate in Small Doses	60
St. Louis Medical College,	
64, 258, 724	
St. Louis College of Pharmacy,	
66, 321, 452	
Scapula. Removal of.....	68
Storer, Dr. H. R.....	68

PAGE.	PAGE.
Springs, Hot, of Arkansas..... 97	Testes, Imperfect Transition of..... 229
St. Luke's Hospital..... 99	Tumors, Removal of..... 377
Saltpetre, Refined..... 100	Treatment of Consumption.... 387
Specula, Ancient and Modern.. 140	Tulip Tree..... 390
Small Pox, How to prevent Pit- ing of the Face from..... 151	Twisting Ends of Arteries..... 448
Sponge Tent, Carbolyzed..... 158	Therapeutics, Hypodermic, 453, 501
Sims' Method in Uterine Sur- gery..... 181	Turning in Midwifery..... 468
Sickness of Pregnancy, Treat- ment of..... 185	Thoroughwort..... 549
Spontaneous Subsidence of an Ovarian Tumor..... 211	Tannin and Iodine..... 659
Spectrum Analysis..... 232	Treatment of Stricture of the Urethra by Use of Holt's Dilator..... 660
Severe Injury of the Head..... 277	Treatment of Insanity..... 683
Skin, Absorption from..... 281	Treatment of so-called Irritable Uterus..... 703
Salicine in Quinine..... 290	To Our Patrons..... 792
Success of Quackery..... 291	
Students Attendance on Lec- tures..... 324	U
Syrup of Horse Radish..... 350	Ulceration, Observations on... 165
Slippery Elm Bougies..... 425	Urethra, Female Diseases of... 174
Skull, Fracture of..... 460	Uterine Surgery, Sims' Method 184
Spurious Vaccination..... 465	University of Michigan..... 356
Subcutaneous Injection..... 477	Umbrella Tree..... 397
Serpentaria (Snake Root)..... 485	Unusual Effects of Subcutane- ous Injection..... 477
Styptic, Chinese..... 520	Ulceration, Indolent..... 564
Sleep, Lecture on..... 533	Use of the Probe..... 576
Statistics of Inebriation... 538, 610	Ulcers and Wounds, Notes on Treatment of..... 509, 581
Sycamore, or Buttonwood..... 655	Urethra, Treatment of with Holt's Dilator..... 661
Secrets of the Ocean..... 656	Uterus, Irritable, Treatment of 703
Solubility of Iodine in Tannin, 660	Urinary Organs, Diseases of... 718
Stricture of Urethra, Treatment of, by Holt's Dilator..... 660	Uterine Sections..... 725
Sugar Insect..... 679	
Strychnine, Antidote for..... 682	V
Steatozoon Folliculorum, Prob- able Source of..... 693	Vegetation, Antideluvian..... 190
Sections of the Uterus..... 725	Venous and Arterial Blood, Nature of..... 325
Salt, Use in Intermittent Fever, 734	Vaccination, Spurious..... 465
Sea Sickness, Prevention of... 748	Virginia Snakeroot..... 485
Sarracenia Purpurea in Variola 772	Vaccination..... 567
	Verbascum Thapsus..... 654
T	Vaginismus..... 675
Tieman & Co..... 35	VITAL STATISTICS OF ST. LOUIS
Treatment of Obstruction of the Bowels..... 56	FOR THE YEAR 1868.
Treatment of Corns..... 89	January..... 36
Tincture of Iodine, Colorless... 123	February..... 100
Treatment of Pneumonia..... 147	March..... 132
Therapeutics, State of..... 154	April..... 196
Treatment of Morning Sickness in Pregnancy..... 185	May..... 260
Trichiasis..... 197	June..... 324
Treatment of Fracture of the Patella..... 205	July..... 388
Tumor, Ovarian..... 211	August..... 452
	September..... 516
	October..... 580

	PAGE.		PAGE.
November.....	660	Weather, Influence on Health..	476
December	692.	Washes and Hair Restorers....	484
W			
Watson, Sir Thomas, Address of	154	Willow, White and Black.....	494
Wood, Dr. James R.....	228	Wounds, Gunshot.....	517
Willamette University, Salem,		Weather and the Moon.....	525.
Oregon.....	322	Wells, Country.....	542
Wounds, Dressing for.....	386	Water, to Protect from Action	
Water, Mineral.....	443	of Lead Pipe.....	542
		Wounds and Ulcers, Notes on	
		the Treatment of.....	509, 581
		Warm Clothing.....	754

